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COOPERATIVE CAMPAIGN FOR THE ERADICATION OF PLAGUE IN PERU

FINAL REPORT

By JOHN D. LONG, *Traveling Representative of the Pan American Sanitary Bureau;
Medical Director, United States Public Health Service*

Historical.—Bubonic plague made its appearance in Peru in April, 1903. From that date to June 30, 1931; there have occurred in that country 20,269 cases, with an average death rate of 50 per cent. Plague cases have been reported from 197 cities, towns, and villages, and from other places, such as farms and hamlets which have no municipal organization.

The infection has also occurred in about 37 seaports, from which it spread to neighboring places through railways, public roads, and other means of communication.

Pan American Sanitary Code.—On November 14, 1924, the plenipotentiary delegates of 18 countries, represented in the Pan American Union, signed ad referendum, in Habana, a sanitary treaty known as the Pan American Sanitary Code. This treaty has for its purpose, among other things, the prevention of the international spread of infections or diseases likely to be conveyed to human beings, and the standardization of cooperative measures for the prevention of the introduction and spread of disease into and from the territories of the signatory countries. The Government of Peru ratified this treaty in 1925.

Action by the Pan American Sanitary Bureau.—In June, 1929, the directing council of the Pan American Sanitary Bureau, after considering the resolutions adopted by the Eighth Pan American Sanitary Conference, held in Lima, Peru, in October, 1927, authorizing the appointment of traveling representatives of the bureau, and, pursuant to the powers regarding cooperative work in the Pan American Sanitary Code, authorized cooperative epidemiological studies of plague in such South American countries as had plague in their territories and were willing to accept such cooperation. The Government of Peru accepted the proposed cooperation and, by an executive decree of September 5, 1930, authorized a cooperative campaign against bubonic plague. For the part played by Peruvian authorities in this work, see the last paragraph of this report.

Beginning of the campaign.—After finishing the necessary preparations, including purchase of necessary material and the adaptation of a building for laboratory purposes, the antiplague campaign in Peru began October 13, 1930, in Lima, to embrace afterwards, Callao, next the Departments of the North and finally those in the South of the country. All employees were given a month of training at half salary, at Lima, before being sent for work outside the city. Those who failed to show the proper spirit were dismissed, so that only those showing interest, enthusiasm, and faithfulness were kept in the service.

Organization.—The country was divided into sectors which, in general, coincided with the boundaries of the Departments, with the exception of the Department of Lima. To each Department there was sent a sanitary assistant, charged with the duty of spreading poison in all places where cases of plague had developed during the preceding five years. To the chief seaports of the Republic there were sent assistant epidemiologists who were instructed to trap and examine rats and send smears prepared with material from suspected rats or guinea pigs which had died after being inoculated with material obtained from rats.

After having carried out poisoning operations in the Departments of Arequipa and Ica two or three times without finding any case of plague (excepting four doubtful cases at Lomas, in the month of February) or any infected rats, the sanitary assistants and epidemiologists, with the single exception of the epidemiologist at Molendo, were transferred to the Departments in the north of the country. In the cities of Lima and Callao and the municipalities of Rimac, La Victoria, La Punta, and Bellavista, plague squads, directed by sanitary inspectors, were set to trapping rats and to distributing poison packages in every building.

At the seaports the assistant epidemiologists not only trapped and examined rats, but also sent fleas to the Lima laboratory for identification and computation of prevalence indices. In order to prevent the spread of plague to other seaports and dissemination to foreign countries, rat poisoning was also carried out in the ports themselves and neighboring towns.

Methods used.—As plague is essentially a disease of the rat, transmitted to human beings by rat-infesting fleas, every effort in the campaign was devoted to the destruction of the above-mentioned rodents. For that purpose 70 tons of poison were prepared and distributed throughout all the plague foci in the country. This poison consisted of flour with 18 per cent of arsenic, and, at times, from 5 to 10 per cent of grated cheese, or some ground dried fish or dried seal meat. Once prepared, the poison was wrapped in paper,

forming cone shaped packages, which contained about 1 teaspoonful of poison in each package.

The traps used in Lima, Callao, and the seaports served not only for the destruction of rats but to make epidemiological studies and determine the flea index, as well as the amount of plague infection among rats.

Results obtained.—The following figures show the results obtained:

Total number of cases of plague in the Republic from April 28, 1903, to June 30, 1931.....	20, 269
Average number of cases per month in the same period.....	60
Average number of cases per month from 1920 to 1930.....	51. 6
Average number of cases per month, 1930.....	31. 5
Average number of cases per month, January 1 to June 30, 1931.....	16

(NOTE.—In general, the months of November, December, January, February, March and, at times, April, are those showing the largest number of cases.)

Cases in the whole Republic during the year 1930

January, 56; February, 29; March, 16; April, 36; May, 26; June, 26; July 11; August, 22; September, 13; October, 28; November, 37; December, 78.

Cases in the Republic in 1931

January, 33; February, 28; March, 9; April, 16; May, 2; June, 9; July, 1 (up to July 20).

Cases in the Republic since the beginning of the antiplague campaign

October, 1930, 28, in 13 foci; November, 37, in 12 foci; December, 78, in 23 foci; January, 1931, 33, in 14 foci; February, 28, in 12 foci; March, 9, in 5 foci; April, 16, in 7 foci; May, 2, in 2 foci; June, 9, in 4 foci; July, 1 (to July 20), in 1 focus.

Cases in Lima since the beginning of the campaign

October, 1930, 2; November, 4; December, 7; January, 1931, 0; February, 2¹; March, 2¹; April, 0; May, 0; June, 3¹.

Epidemiological data.—As Dr. C. R. Eskey, consulting epidemiologist of the campaign, will submit a detailed epidemiological report, it will not be necessary to treat extensively that phase of the subject in this report.

¹ The cases reported in February, March, and June were, in all probability, not contracted in Lima by autochthonous infection. One of the February patients was a tramp without a permanent home who had been looking for work not only in the city of Lima, but on the neighboring plantations; the other, a Chinaman, lived practically under the same conditions. Of the March cases, I was able to verify that one had become ill through infection brought in, probably, from Huacho. The other had also been infected, in all probability, outside the city.

The three cases reported in June occurred in the vicinity of the Central Market. The first became ill five days after having removed a rat from a trap, and the other two had lived together in the same room of a boarding house near the Central Market. Two infected rats were caught in the same neighborhood, and there are good reasons for believing that the infection was introduced from the outside, through merchandise brought for sale to the market, as happened with the case in March. After an intensive poisoning drive in the market and all the nearby houses, no more cases of plague occurred, nor has even one infected rat been found there.

Other than the rat, there has not been found in any part of the country any rodent or other animal acting as a reservoir for plague, with the single exception of an infected mouse, which was found dead in the same room in Lima where the two cases of plague were discovered. Many animals, such as wild rats, buzzards, and others, were examined, but none of them was found infected.

There are three species of rats in Peru. The most common is the *Rattus norvegicus*. There also exist large numbers of *Rattus rattus* and *Rattus alexandrinus*. All of these are, or may be, plague vectors. They also act as hosts for *X. cheopis*, the flea generally responsible for the dissemination of plague.

Eight varieties of fleas have been found. Among them one new variety has not been identified as yet—possibly two new varieties.

The flea index which, at the beginning, was 8 per rat, in Lima, has decreased to less than 1 per rat. The highest index found in the country was in Pacasmayo, and was 34 per rat. The index has decreased there to less than 4 per rat. In general, the flea index in the entire country has been reduced between 80 and 90 per cent. After taking into account such factors as climate, humidity, varieties of rats, flea indices, types of construction of dwellings, and customs of the people, the epidemiological studies indicate that the following-named places are most favorable for harboring plague:

Department of Piura, especially in the villages of Ayavaca and Huancabamba. However, since the marked diminution of cases of plague in the Province of Loja, Ecuador, the number of cases in the Department of Piura has decreased considerably. The cooperative work by Peru and Ecuador, in accordance with an agreement signed in Piura, July, 1930, by representatives of both countries, should continue.

Department of Lambayeque, especially on certain plantations in the vicinity of Chiclayo and in Villa Eten.

Department of La Libertad, especially in Pacasmayo, San Pedro, certain plantations in the valleys of Chicama and of Santa Catalina and in the city of Trujillo.

Department of Lima, more especially in the Huacho and Huaral country region, and also in the plantations along the Rimac and Carabaillo Rivers. Without a doubt, the latest infections in Lima were introduced from Huacho, Huaral, and neighboring plantations. This was clearly brought out in one of the cases of plague which occurred in the month of March, and there are valid reasons for believing that the cases in February, March, and June may be traced to the same source.

Another phenomenon attracting considerable public attention and which has been observed personally by the writer in Lima, Callao, and Miraflores, and in Monsefu, Villa Eten, Chiclayo, and other towns, is

the marked decrease in the number of fleas in comparison with the usual number of fleas found previously in these places.

This same fact has been noted in antiplague campaigns in other countries and generally coincides with a decrease of from 50 to 60 per cent in the number of rats, and serves, to a certain extent, as evidence of the success attained by the use of poison.

Epidemiological data for the seaports

Ports	Number of rats trapped	Infected rats	Human cases in the year 1931	Date of last case
Mollendo.....	1,823	None.	None.	
Cerro Azul.....	312	None.	None.	
Pisco.....	763	None.	None.	
Chimbote.....	58	None.	None.	
Salaverry.....	1,349	3	1	January.
Pacasmayo.....	849	6	4	February.
Eten.....	567	None.	None.	
Pimentel.....	267	None.	None.	
Paita.....	1,469	1	None.	
Callao.....	4,931	None.	None.	

Number of poisonings

Mollendo, 5; Cerro Azul, 2; Pisco, 3; Chimbote, 3; Salaverry, 5; Pacasmayo, 5; Eten, 6; Pimentel, 6; Paita, 4; Callao, 4.

Epidemiological data for Lima since January 1, 1931

Human cases of plague, 7; last case in June.

Rats trapped, 26,336; rats examined, 22,448; infected rats, 6; infected mice, 1; last infected rat found in June.

Statistical data of plague for Peru

Cases reported since April 28, 1903.....	20,269
Annual average.....	720
Annual average from 1920-1930.....	619
Number of cases in 1930.....	378
Number of cases from January 1 to June 30, 1930.....	189
Number of cases from January 1 to June 30, 1931.....	97

Number of monthly cases in 1930 and 1931

1930:

January, 56; February, 29; March, 16; April, 36; May, 26; June, 26; July, 11; August, 22; September, 13; October, 28; November, 37; December, 78.

1931:

January, 33; February, 28; March, 9; April, 16; May, 2; June, 9; July, 1 (up to July 20).

NOTE.—The antiplague campaign began October 13, 1930.

Number of plague foci in the country since 1903.....	197
Number of foci in the last five years.....	108
Number of foci and adjacent places poisoned.....	125

NOTE.—In reporting plague foci, no account is taken of many plantations and other places lacking a municipal organization.

Number of poisonings.....	297
Tons of poison distributed.....	70
Packages of poison in 70 tons.....	21, 000, 000
Estimated number of rats destroyed.....	4, 000, 000

NOTE.—The number of rats destroyed is estimated by observations made in different towns to the effect that rats usually eat from one-fifth to one-sixth of the packages distributed in the houses.

Cost of the antiplague campaign

Total monthly expenses approved by the Government from September, 1930, to June 30, 1931, 10 months, Peruvian soles.....	² 155, 574
Cost per rat destroyed (as calculated above), Peruvian sol.....	³ 0. 038
Tons of commercial arsenic used.....	12. 6
Tons of other material used, flour, etc.....	57. 4
Traps in use, including cages and snap or deadfall traps.....	12, 000

From the beginning the campaign was conducted in the most economical manner possible, and, as a result, there is a small balance left in the treasury of the Department of Public Works. This surplus will be used to purchase arsenic and new traps to replace those which have become useless during the campaign. The necessary orders have already been sent out and the articles should arrive sometime during the month of August.

All the salaries, wages, accounts, and invoices up to June 30, 1931, have been paid.

Accounting.—The monthly expenses of the campaign were budgeted in the month preceding that in which the money was to be spent.

As soon as the budget was approved and the order for payments signed, the money was deposited, in cash, by the Director of the Treasury with the cashier of the Department of Public Works. As needed, funds were withdrawn by means of invoices previously approved by the National Chief of the Anti plague Campaign and one of the representatives of the Pan American Sanitary Bureau, as well as the National Director of Health. As a result of this simple, rapid, and efficient method of procedure, it was possible to have constantly on hand an up-to-date financial statement of the campaign; and, as all purchases were on a cash basis, or cash on presentation of bills, the articles were obtained at much lower prices than would otherwise have been the case, resulting in great economy.

This method was authorized by executive decree of September 5, 1930, and should continue when the permanent antiplague service becomes operative.

Remarks.—The number of plague cases (97) occurring in the first six months of 1931 is only 51.3 per cent of the number (189) occurring in the first six months of 1930 and 25 per cent of the average (386) for the first six months of the years 1920–1930. However, there is a remarkable difference in the statistics of the years referred to, because

² About \$43,747.

About \$0.01.

in previous years the monthly average varied but slightly, while during the year 1931 there has been an almost constant decrease, beginning with the month of December, 1930, due to the antiplague campaign.

All the seaports of the country are free from bubonic plague. There has not been a case of plague in any seaport, according to the records of the Department of Public Health, since April, 1931. This last case was reported from Puerto Chicama, and there are grounds for assuming that it was either imported or infected in some other locality and was not autochthonous to the seaport. The last plague-infected rat found in a seaport was in Pacasmayo, March 3, 1931. Among the sixty-odd seaports in the country, 37 have had plague since 1903. Unfortunately, it is not possible to declare as yet any port clean, due to the presence of cases of smallpox in various parts of the country and the lack, in some of the ports, of certain requirements contemplated by the Pan American Sanitary Code.

As explained above, there have been 197 urban foci of plague in the country since 1903. This figure was reduced to 108 during the years from 1925 to 1930. In the first six months of 1931, there were only 34 urban foci and, during the last three months, when the results of the antiplague campaign were most evident, only 13 active foci. In a sense, therefore, it may be considered that bubonic plague is under control in Peru, but it can not be said to be definitely eradicated as yet, for there may still be sporadic cases from time to time.

Recommendations.—The National Antiplague Service should continue its activities with determination and energy, at least for a year, and, preferably, two years, from the date on which the last case was reported.

An advisory commission should be appointed, composed of the following members of the consulting board of the Department of Health: Drs. Abel Olaechea and Ramón E. Ribeyro, and the Assistant Director of Health.

The advisory commission should make frequent inspections of the activities of the National Plague Service, interviewing the chief of the service, auditing the accounts of the campaign, and one of its members should place his approval, together with that of the chief of the service, on all accounts, pay rolls, and invoices, before sending them to the Director of Health for approval.

The employees of the National Antiplague Service, appointed by executive decree of July 15, 1931, must be regarded as holding permanent positions while performing their duties satisfactorily, and no employee should be removed without the knowledge and approval of the advisory commission. This recommendation is made because of the fact that those employees who have been retained as permanent employees in the service are those showing most interest and ability

and faithfulness, and, having more experience, a better knowledge of the work.

Epidemiological studies and experience with the cases of plague which occurred in the months of March and June demonstrate clearly that the Central Market of Lima is a constant menace to public health from the standpoint of bubonic plague. An infection may occur at any time, brought in in loads of vegetables, merchandise, or other products coming from infected places. Consequently, it is absolutely necessary to reconstruct the market and make it rat proof. Also, all the houses, the warehouses, grocery stores, and places where provisions and merchandise are stored should be made rat proof. The storage of such products in private houses or dwellings must be definitely prohibited and there must be in operation a service of inspection, charged with the duty of enforcing these provisions.

The National Antiplague Service, in the form in which it is organized, can poison all the plague foci of the country every three months, and, at the same time, apply preventive measures should any case of plague develop. The methods which have proved successful up to the present time must continue without modification.

Acknowledgment.—The Government of Peru, since the beginning of the campaign, has demonstrated much interest and rendered all assistance possible. The same may be said of the Ministry of Public Works and the Department of Health. Those especially entitled to mention are the Minister of the Treasury, Don Rafael Larco Herrera, the present Director of the Treasury, Mr. Campodónico, the accountant of the Ministry of Public Works, Mr. J. F. Cortez, Dr. Nicolás Cavassa, chief of the National Antiplague Service up to January, 1931, and Dr. Benjamin Mostajo, epidemiologist and chief of the National Antiplague Service. Credit must be given for the greater part of the success attained to the interest, enthusiasm, and application of Doctor Mostajo.

OCCURRENCE OF A COLONY OF THE TICK PARASITE *HUNTERELLUS HOOKERI* HOWARD IN WEST AFRICA

By CORNELIUS B. PHILIP, *Associate Entomologist, United States Public Health Service*

Interest in hymenopterous parasites of ticks has been increasing of late, particularly in relation to their possible value as a means of combating disease-carrying ticks in the United States. Studies relating to this subject are being conducted in Montana by Prof. R. A. Cooley and his associates of the State Board of Entomology with a parasite, *Ixodiphagus caucurtei* du Buysson, introduced from France in 1926.

Opportunity to make limited observations of tick-parasite activities was presented incidental to the investigations of the writer while in Nigeria as a member of the West African Yellow Fever Commis-

sion of the International Health Division of the Rockefeller Foundation. These observations are recorded because they indicated the existence of a well-established colony of tick parasites which apparently offers an exceptional opportunity for intensive bionomical studies under natural conditions. The discovery of this colony has already been noted. (Philip, 1931.)

The first clue to the occurrence of such parasites near Lagos was the observation in February, 1929, of a minute hymenopteron on a dog which had been allowed to wander about the vicinity of the Commission compound at Yaba. The insect retreated into the hair of the animal too quickly to be captured.

Rhipicephalus sanguineus Latr. was the tick which was most in evidence in southern Nigeria. It was most commonly found on dogs and was practically never observed on human beings, despite frequent contacts with infested areas. The European residents of the region make a practice of "ticking" their pets every 2 or 3 days, so abundant are these pests in several residential sections at certain seasons of the year. Examination of dogs in the vicinity of Apapa, a European settlement on the mainland near Lagos Harbor, revealed large numbers of adult parasites on dogs from late March to June, 1929. They were found on both long-haired and short-haired animals, particularly those belonging to residents living on the edge of the settlement where the dogs had access to grassy areas bordering "the bush."

Engorged nymphs of *Rhipicephalus* which were picked from two European owned dogs at Apapa during the 3 weeks prior to April 12, 1929, were separated in a number of vials and stored at laboratory temperature. Flat and partially engorged ticks were discarded. Subsequently, parasites emerged in considerable numbers. Emergence counts, however, were delayed until September 30, with the results presented in the accompanying table. Isolations to determine the number of parasites emerging from individual nymphs were not attempted.

Percentage of parasitism among engorged nymphs of *R. sanguineus*

Nymph lots separated April 12		Parasitized nymph count September 30			
		Parasites recovered		No parasitism evident	
Vial No	Total number of nymphs	Nymphs with emergence holes	Nymphs with parasites unescaped	Shrunk-en nymphs	Adult ticks molted out
1.....	36	26	5	4	1
2.....	73	49	16	8	0
3.....	5	3	0	2	0
4.....	26	25	9	2	0
5.....	55	48	8	1	1
6.....	65	48	10	7	0
7.....	50	32	12	6	0
Total.....	323	231	60	30	2

Parasitism of nymphs without emergence holes, as listed in the fourth column, was confirmed by dissection. Twenty contained parasite pupæ and 11 others contained larvæ which had failed to complete development. The remaining 29 contained adult parasites which had been unable to effect an emergence hole through the "shell" of the nymph.

Dissection of the "shrunk nymphs" failed to reveal evidence of parasitism. Whether these nymphs died of mechanical injury after removal from the dogs or as a result of unfavorable storage conditions was not apparent. Parasitism was not evident, although it can not be said that even these had not been parasitized, as death perhaps occurred before development of the parasites was possible.

It is seen, therefore, that 90.09 per cent is the minimum figure for parasitism in the total of 323 nymphs, with the possibility that the percentage was even higher.

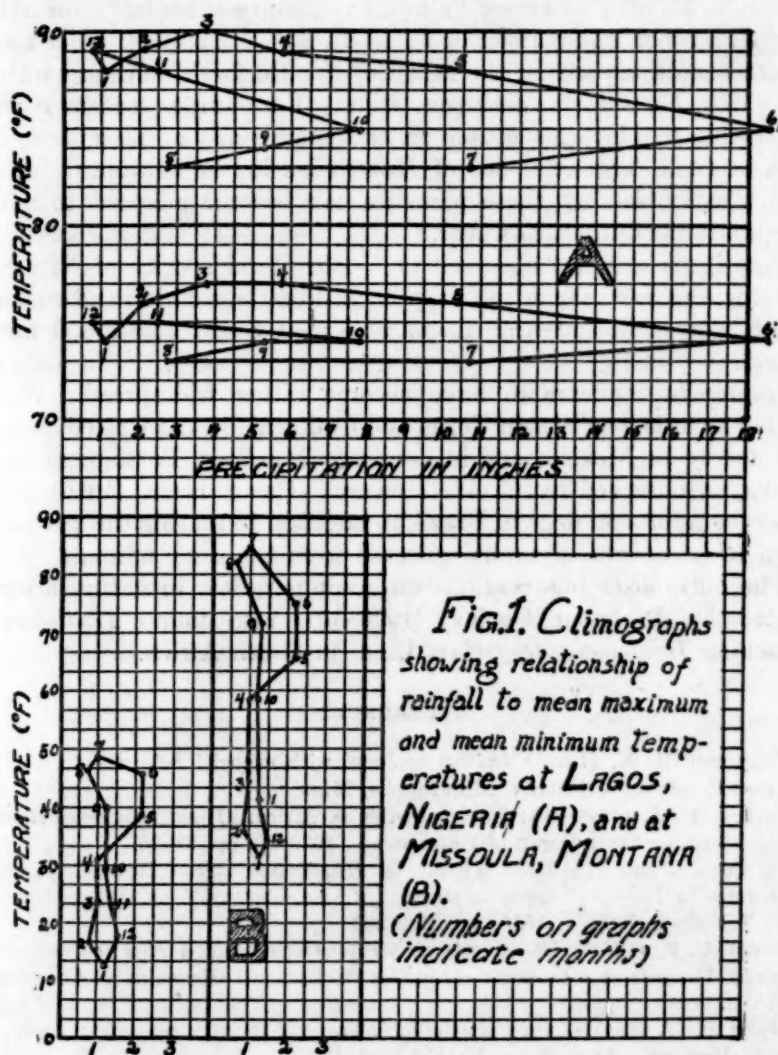
A few flat nymphs of *R. sanguineus* were placed in the ears of a caged rabbit and allowed to attach, and some of the adult parasites were then liberated in the ears of the same animal. The females immediately busied themselves looking for ticks and were repeatedly observed to oviposit in the nymphs, although evidence of feeding in the latter was still not perceptible. Unfortunately, lack of time prevented following these experiments further, but the readiness of the parasites to function under confined conditions was demonstrated.

Intensive study of this area through two or more consecutive seasons would be most enlightening as to the behavior of this parasite in a locality where it is established. The present meager figures do not justify conclusions as to its effectiveness in the control of ticks, since the ticks were apparently maintaining themselves in considerable abundance in spite of the heavy parasitism. It is quite possible that, at the time of these observations, *Hunterellus* was just overtaking the *Rhipicephalus* population in the Lagos area, and that an observation a year later would have revealed a marked change in numbers of hosts and parasites. This is further suggested by studies by Thompson and others who have shown that populations of hosts may be on the increase for a number of generations, the effects of parasitism being imperceptible in spite of the fact that with each succeeding generation the parasites are overtaking the hosts and will determine the ultimate destruction of the host population. (See Chapman, 1926, p. 159.)

Whether or not *Hunterellus* has been a native of Nigeria for long is a matter of moment, since it seems so well established near Lagos. The shifting European population, particularly in official work, with consequent movement of pet dogs to the new appointments in the colonies, would have its effect in dispersal of the parasites. If recently introduced, the parasites should still be concentrated in the vicinity of the

European communities. There is little contact allowed between the pets of the Europeans and the local, short-haired dogs in the native sections. Only a few of the latter were examined in the native sections but failed to show evidence of the presence of adult parasites.

Such points as the above could be settled by further observations of the local host-parasite complex. The data secured might also give a



clue as to the possibilities of using this particular parasite in combating ticks in other localities.

Climographs representing the average rainfall plotted against the mean maximum and mean minimum monthly temperature for a period of 28 years at Lagos, are presented in Figure 1(A) in order that some idea may be gained of the climatic factors under which

this colony of parasites exists. The relative stability of the yearly march of temperature and the tremendous amount of rainfall reaching a maximum in June are to be remarked. Attempts at introduction of such parasites into temperate climates will therefore have to cope with a considerable difference in climate conditions, in addition to the adaptation of the parasites to new tick hosts. Climographs for Missoula, Mont. (Bitterroot Valley) are also presented in Figure 1(B) to give a rough comparison of these climatic differences under temperate conditions within the range of the Rocky Mountain spotted fever tick, *Dermacentor andersoni* Stiles. For obvious reasons it was impossible to plot this graph on the same scale of magnitude as that in (A). The existence of *Hunterellus* in the southern United States indicates that these parasites can become adapted to more temperate conditions, however.

Parasitism was not observed in 5 other local species of Nigerian ticks, whose hosts included hump-backed cattle, rabbits, and snakes, which were collected near Lagos and near Shaki about 300 miles inland.

Hunterellus appears to have become rather widespread. Wood (1911) records localities in Texas and California in the United States, Monterrey in Mexico, and in Lourenço Marques, Portuguese East Africa, as observed by C. W. Howard. Costa Lima (1915) later observed adults on dogs in Brazil, in addition to rearing the parasites from *Rhipicephalus* nymphs collected from the same animals.

The only other observations on adult parasites in nature are reported by Professor Cooley (1929-30), who found *Ixodiphagus* attacking *Hyalomma aegyptium* Linn. in South Africa.

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EXTENT OF RURAL HEALTH SERVICE IN THE UNITED STATES, 1927-1931¹

According to data obtained by the Office of Rural Sanitation of the Public Health Service from the health departments of the States, Table 1 presents a list, by States, of counties (or districts) in which the rural sections thereof at the beginning of the calendar years 1927, 1928, 1929, 1930, and 1931, respectively, were provided with local health service under the administration of whole-time county or (local) district health officers.

In making up the lists of counties by States for 1931 it was decided to include as having whole-time health service a number of counties which are operating in groups under the direction of full-time district health officers maintained jointly by the pooling of individual county appropriations. It was also decided to include all counties in which there are whole-time local organizations maintained entirely by the State health department. Including these counties, which in some instances have not been listed heretofore, accounts for some of the increases noted for 1931.

TABLE 1.—*List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers*

ALABAMA

1927	1928	1929	1930	1931
Baldwin.	Baldwin.	Baldwin.	Baldwin.	Baldwin.
Barbour.	Barbour.	Barbour.	Barbour.	Barbour.
Calhoun.	Calhoun.	Blount.	Blount.	Blount.
Chambers.	Chambers.	Bullock.	Bullock.	Bullock.
Coffee.	Coffee.	Calhoun.	Calhoun.	Calhoun.
Colbert.	Colbert.	Chambers.	Chambers.	Chambers.
Covington.	Covington.	Cherokee.	Cherokee.	Cherokee.
Dallas.	Cullman.	Clarke.	Choctaw.	Choctaw.
Escambia.	Dale.	Cleburne.	Clarke.	Clarke.
Etowah.	Dallas.	Coffee.	Cleburne.	Cleburne.
Franklin.	Elmore.	Colbert.	Coffee.	Coffee.
Houston.	Escambia.	Conecuh.	Colbert.	Colbert.
Jackson.	Etowah.	Covington.	Conecuh.	Conecuh.
Jefferson.	Franklin.	Crenshaw.	Covington.	Covington.
Lauderdale.	Houston.	Cullman.	Crenshaw.	Crenshaw.
Lawrence.	Jefferson.	Dale.	Cullman.	Cullman.
Lee.	Lauderdale.	Dallas.	Dale.	Dale.
Limestone.	Lawrence.	De Kalb.	Dallas.	Dallas.
Madison.	Lee.	Elmore.	De Kalb.	De Kalb.
Marengo.	Limestone.	Escambia.	Elmore.	Elmore.
Marshall.	Madison.	Etowah.	Escambia.	Escambia.
Mobile.	Marengo.	Franklin.	Etowah.	Etowah.
Montgomery.	Marshall.	Houston.	Franklin.	Franklin.
Morgan.	Mobile.	Jackson.	Geneva.	Geneva.
Pike.	Monroe.	Jefferson.	Houston.	Houston.
Sumter.	Montgomery.	Lamar.	Jackson.	Jackson.
Talladega.	Morgan.	Lauderdale.	Jefferson.	Jefferson.
Tallapoosa.	Pike.	Lawrence.	Lamar.	Lamar.
Tuscaloosa.	Sumter.	Lee.	Lauderdale.	Lauderdale.
Walker.	Talladega.	Limestone.	Lawrence.	Lawrence.
	Tallapoosa.	Lowndes.	Lee.	Lee.
	Tuscaloosa.	Macon.	Limestone.	Limestone.
	Walker.	Madison.	Lowndes.	Lowndes.
		Marengo.	Macon.	Macon.
		Marshall.	Madison.	Madison.
		Monroe.	Marengo.	Marengo.
			Marshall.	Marion.

¹ From the Office of Rural Sanitation, United States Public Health Service.

TABLE 1.—List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued

ALABAMA—Continued

1927	1928	1929	1930	1931
		Montgomery. Morgan. Pickens. Pike. Shelby. Sumter. Talladega. Tallapoosa. Tuscaloosa. Walker. Washington. Wilcox. Winston.	Mobile. Monroe. Montgomery. Morgan. Pickens. Shelby. Sumter. Talladega. Tallapoosa. Tuscaloosa. Walker. Washington. Wilcox. Winston.	Marshall. Mobile. Monroe. Montgomery. Morgan. Perry. Pickens. Pike. Shelby. Sumter. Talladega. Tallapoosa. Tuscaloosa. Walker. Washington. Wilcox. Winston.

ARIZONA

Cochise. Yuma.	Cochise. Coconino. Yuma.	Cochise. Coconino. Yuma.	Cochise. Coconino. Yuma.	Cochise. Coconino. Gila. Maricopa. Pima. Yuma.
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ARKANSAS

Garland. Jefferson. Pulaski.	Arkansas. Ashley. Chicot. Conway. Crittenden. Cross. Desha. Drew. Garland. Jackson. Jefferson. Little River. Mississippi. Monroe. Phillips. Pope. Pulaski. Saline. Union. Woodruff. Yell.	Arkansas. Ashley. Chicot. Conway. Crittenden. Cross. Desha. Drew. Faulkner. Garland. Jackson. Jefferson. Little River. Mississippi. Monroe. Phillips. Pope. Pulaski. Saline. Sebastian. Union. White. Woodruff. Yell.	Arkansas. Ashley. Conway. Cross. Desha. Drew. Garland. Jackson. Jefferson. Little River. Mississippi. Monroe. Phillips. Pope. Pulaski. Saline. Sebastian. Union. White. Woodruff. Yell.	Arkansas. Ashley. Clark. Conway. Cross. Desha. Drew. Garland. Jackson. Jefferson. Little River. Lonoke. Mississippi. Monroe. Ouchita. Phillips. Pope. Pulaski. Saline. Sebastian. Union. White. Woodruff. Yell.
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CALIFORNIA

Los Angeles. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Yolo.	Los Angeles. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Yolo.	Contra Costa. Los Angeles. Madera. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Yolo.	Contra Costa. Los Angeles. Madera. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Stanislaus. Yolo.	Contra Costa. Imperial. Los Angeles. Madera. Monterey. Orange. Riverside. San Diego. San Joaquin. San Luis Obispo. Santa Barbara. Stanislaus. Yolo.
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TABLE 1.—*List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued*

COLORADO

1927	1928	1929	1930	1931
Otero.	Otero.	Otero.	Otero.	Otero.

CONNECTICUT

Fairfield. ¹	Fairfield. ¹	Fairfield. ¹	Fairfield. ¹	Fairfield. ¹
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DELAWARE

				Kent. Sussex. New Castle.
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FLORIDA

Manatee. Polk. Sarasota.	Manatee. Polk. Sarasota.	Manatee. Polk. Sarasota.	Manatee. Sarasota.	Leon. Manatee. Taylor.
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GEORGIA

Baker. Baldwin. Bartow. Bibb. Brooks. Brooks. Clarke. Cobb. Decatur. De Kalb. Dougherty. Floyd. Glynn. Grady. Hall. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware.	Baldwin. Bartow. Bibb. Brooks. Chatham. Clarke. Cobb. Coffee. Colquitt. Crisp. Decatur. De Kalb. Dougherty. Floyd. Glynn. Hall. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware. Washington.	Baldwin. Bartow. Bibb. Brooks. Chatham. Clarke. Cobb. Coffee. Colquitt. Crisp. Decatur. De Kalb. Dougherty. Emanuel. Floyd. Glynn. Grady. Hall. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware. Washington. Wayne. Worth.	Baldwin. Bartow. Bibb. Brooks. Chatham. Clarke. Clinch. Cobb. Coffee. Colquitt. Crisp. Decatur. De Kalb. Dougherty. Emanuel. Floyd. Glynn. Grady. Hall. Jefferson. Jenkins. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware. Washington. Wayne. Worth.	Baldwin. Bartow. Bibb. Brooks. Chatham. Clarke. Clinch. Cobb. Coffee. Colquitt. Decatur. De Kalb. Dougherty. Floyd. Glynn. Grady. Hall. Jefferson. Jenkins. Laurens. Lowndes. Mitchell. Richmond. Spalding. Sumter. Thomas. Troup. Walker. Ware. Washington.
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IDAHO

			Bonneville. Twin Falls.	Twin Falls.
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¹ District.

TABLE 1.—*List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued*

ILLINOIS				
1927	1928	1929	1930	1931
Cook. Morgan. Sangamon.	Cook. Du Page. Morgan.	Cook. Du Page. Morgan. Pulaski.	Cook. Du Page. Morgan.	Du Page. Morgan.
IOWA				
Dubuque.				Washington. Woodbury.
KANSAS				
Butler. Coffey. Ellis. Geary. Jefferson. Lyon. Marion. Ottawa. Phillips.	Butler. Cherokee. Ellis. Geary. Greenwood. Jefferson. Lyon. Marion. Ottawa. Shawnee.	Brown. Butler. Cherokee. Geary. Greenwood. Jefferson. Lyon. Marion. Ottawa. Shawnee.	Brown. Butler. Cherokee. Dickinson. Geary. Greenwood. Lyon. Marion. Ottawa. Sedgwick. Shawnee.	Brown. Butler. Cherokee. Dickinson. Geary. Greenwood. Lyon. Marion. Ottawa. Sedgwick. Seward. Shawnee.
KENTUCKY				
Boyd. Davies. Fayette. Fulton. Jefferson. Johnson. Knott. Mason. Scott.	Ballard. Boyd. Breathitt. Carlisle. Carter. Davies. Elliott. Estill. Fayette. Floyd. Fulton. Henderson. Hickman. Hopkins. Johnson. Knott. Lawrence. Lee. Leslie. Letcher. Magoffin. Martin. Mason. McLean. Menifee. Morgan. Owsley. Perry. Pike. Scott. Webster. Wolfe.	Ballard. Bell. Boyd. Breathitt. Bullitt. Carlisle. Carter. Davies. Elliott. Estill. Fayette. Floyd. Fulton. Henderson. Hickman. Hopkins. Johnson. Knott. Knox. Lawrence. Lee. Leslie. Letcher. Magoffin. Martin. McLean. Menifee. Monroe. Morgan. Ohio. Owsley. Perry. Pike. Scott. Trigg. Webster. Whitley. Wolfe.	Ballard. Bell. Boyd. Breathitt. Bullitt. Calloway. Carlisle. Carter. Davies. Elliott. Estill. Fayette. Floyd. Fulton. Henderson. Hickman. Hopkins. Jefferson. Kenton. Knott. Knox. Lawrence. Lee. Leslie. Letcher. Lincoln. Madison. Magoffin. Mason. McLean. Menifee. Monroe. Morgan. Muhlenberg. Ohio. Owsley. Perry. Pike. Scott. Trigg. Union. Wayne. Webster. Whitley. Wolfe.	Bell. Boyd. Breathitt. Bullitt. Calloway. Carlisle. Carter. Davies. Elliott. Estill. Fayette. Floyd. Fulton. Henderson. Hickman. Hopkins. Jefferson. Kenton. Knott. Knox. Lawrence. Lee. Leslie. Letcher. Lincoln. Madison. Magoffin. Mason. McLean. Menifee. Monroe. Morgan. Muhlenberg. Ohio. Owsley. Perry. Pike. Scott. Trigg. Union. Wayne. Webster.

TABLE 1.—List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued

LOUISIANA¹

1927	1928	1929	1930	1931
Caddo. Claiborne. De Soto. Lafourche. Natchitoches. Ouachita. Plaquemines. St. Mary. Washington. Webster.	Assumption. Avoyelles. Caddo. Caldwell. Catahoula. Claiborne. Concordia. De Soto. East Carroll. Franklin. Iberia. Lafayette. Lafourche. La Salle. Madison. Morehouse. Natchitoches. Ouachita. Plaquemines. Rapides. Richland. St. Martin. St. Mary. Tangipahoa. Tensas. Washington. Webster. West Carroll.	Assumption. Avoyelles. Caddo. Caldwell. Catahoula. Claiborne. Concordia. De Soto. East Carroll. Franklin. Iberia. Iberville. Lafayette. Lafourche. La Salle. Madison. Morehouse. Natchitoches. Ouachita. Point Coupee. Rapides. Richland. St. Landry. St. Martin. St. Mary. Tensas. Terrebonne. Webster. West Carroll.	Assumption. Avoyelles. Caddo. Caldwell. Catahoula. Claiborne. Concordia. De Soto. East Carroll. Franklin. Iberia. Iberville. Lafayette. Lafourche. La Salle. Lincoln. Madison. Morehouse. Natchitoches. Ouachita. Point Coupee. Rapides. Richland. St. Landry. St. Martin. St. Mary. Tensas. Terrebonne. Washington. Webster. West Carroll.	Assumption. Avoyelles. Caddo. Caldwell. Catahoula. Claiborne. Concordia. De Soto. East Carroll. Franklin. Iberia. Iberville. Lafayette. Lafourche. La Salle. Lincoln. Madison. Morehouse. Natchitoches. Ouachita. Point Coupee. Rapides. Richland. St. Landry. St. Martin. St. Mary. Tensas. Terrebonne. Washington. Webster. West Carroll.

MAINE

Oldtown. Rumford. ³ Sanford. ³ Waterville. York.	Motbov Union. ³ Rumford. ³ Sanford. ³ Vassalboro. ³	Motbov Union. ³ Rumford. ³ Sanford. ³ Vassalboro. ³	Motbov Union. ³ Rumford. ³ Sanford. ³ Vassalboro. ³	Motbov Union. ³ Rumford. ³ Sanford. ³ Vassalboro. ³
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MARYLAND

Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery.	Allegany. Baltimore. Calvert. Carroll. Frederick. Montgomery. Prince Georges. Talbot.	Allegany. Baltimore. Calvert. Carroll. Frederick. Harford. Montgomery. Prince Georges. Talbot.	Allegany. Baltimore. Calvert. Carroll. Cecil. Frederick. Harford. Montgomery. Prince Georges. Talbot. Wicomico.	Anne Arundel. Allegany. Baltimore. Calvert. Carroll. Cecil. Frederick. Harford. Kent. Montgomery. Prince Georges. Talbot. Washington. Wicomico.
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MASSACHUSETTS

Cape Cod. ⁴	Barnstable. ⁴	Barnstable.	Barnstable.	Barnstable
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¹ Parishes.² Including towns of Orono, Milford, Bradley, and Veazie.³ Town (township) wholly or partly rural.⁴ District.⁵ See Reprint No. 1184, p. 34, from Public Health Reports of Oct. 21, 1927.

TABLE 1.—List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued

MICHIGAN				
1927	1928	1929	1930	1931
		Oakland. Saginaw. Wexford.	Genesee. Oakland. Saginaw. Wexford.	Alcona. ¹ Alpena. ¹ Antrim. ¹ Charlevoix. ¹ Cheboygan. ¹ Crawford. ¹ Emmet. ¹ Genesee. Iosco. ¹ Isabella. Kalkaska. ¹ Kent. Midland. Missaukee. ¹ Montmorency. ¹ Oakland. Ogemaw. ¹ Oscoda. ¹ Otsego. ¹ Ottawa. Presque Isle. ¹ Roscommon. ¹ Saginaw. Wexford.
MINNESOTA				
St. Louis.	St. Louis.	St. Louis.	St. Louis.	St. Louis.
MISSISSIPPI				
Bolivar. Clarke. Coahoma. Forrest. Hancock. Harrison. Hinds. Holmes. Jackson. Jones. Lamar. Lee. Leflore. Pearl River. Perry. Sharkey. Union. Washington.	Bolivar. Clarke. Coahoma. Forrest. Hancock. Harrison. Hinds. Holmes. Humphreys. Issaquena. Jackson. Jones. Lamar. Leflore. Pearl River. Perry. Sharkey. Sunflower. Tishomingo. Union. Warren. Washington. Yazoo.	Adams. Bolivar. Clarke. Coahoma. Copiah. Forrest. Hancock. Harrison. Hinds. Holmes. Humphreys. Issaquena. Jackson. Jones. Lamar. Lauderdale. Lee. Leflore. Lincoln. Monroe. Monroe. Pearl River. Perry. Sharkey. Sunflower. Tishomingo. Union. Warren. Washington. Yazoo.	Adams. Bolivar. Clarke. Coahoma. Copiah. Forrest. Hancock. Harrison. Hinds. Holmes. Humphreys. Issaquena. Jackson. Lamar. Lauderdale. Lee. Leflore. Lincoln. Monroe. Monroe. Pearl River. Perry. Sharkey. Sunflower. Tishomingo. Union. Warren. Washington. Yazoo.	Adams. Bolivar. Clarke. Coahoma. Copiah. Forrest. Hancock. Harrison. Hinds. Holmes. Humphreys. Issaquena. Jackson. Lamar. Lauderdale. Lee. Leflore. Lincoln. Monroe. Monroe. Pearl River. Perry. Sharkey. Sunflower. Tishomingo. Union. Warren. Washington. Yazoo.
MISSOURI				
Boone. Dunklin. Greene. Holt. Jackson. Marion. New Madrid. Nodaway.	Boone. Dunklin. Greene. Holt. Jackson. Marion. Mississippi. New Madrid. New Madrid.	Boone. Dunklin. Greene. Jackson. Marion. Mississippi. New Madrid. Nodaway.	Boone. Buchanan. Dunklin. Greene. Jackson. Marion. Mississippi. New Madrid.	Boone. Buchanan. Dunklin. Greene. Jackson. Marion. Miller. New Madrid.

¹ Included in four districts of four counties each.

TABLE 1.—List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued

MISSOURI—Continued

1927	1928	1929	1930	1931
Pemiscot. Pettis. St. Francois. St. Louis.	Nodaway. Pemiscot. Pettis. Scott. St. Francois. St. Louis.	Pemiscot. St. Francois. St. Louis. Scott.	Nodaway. Pemiscot. St. Francois. St. Louis. Scott.	Nodaway. Pemiscot. Scott. St. Francois. St. Louis.

MONTANA

Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.	Cascade. Lewis and Clark. Missoula.	Cascade. Gallatin. Lewis and Clark. Missoula.	Cascade. Gallatin. Lewis and Clark. Missoula.
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NEW MEXICO

Bernalillo. Chaves. Dona Ana. Eddy. McKinley. Santa Fe. San Miguel. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. McKinley. Santa Fe. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. Santa Fe. Union. Valencia.	Bernalillo. Chaves. Dona Ana. Eddy. McKinley. Union. Valencia.	Bernalillo. Dona Ana. Eddy. Lea. McKinley. Santa Fe. Union. Valencia.
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NEW YORK

Cattaraugus.	Cattaraugus.	Cattaraugus. Suffolk.	Cattaraugus. Cortland. Suffolk. Westchester.	Cattaraugus. Cortland. Suffolk. Westchester.
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NORTH CAROLINA

Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Carteret. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Nash. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Carteret. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Nash. New Hanover. Northampton. Pamlico. Pitt. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Brunswick. Buncombe. Cabarrus. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Gaston. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Moore. Nash. New Hanover. Northampton. Pamlico. Pitt. Richmond. Randolph. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Buncombe. Cabarrus. Cherokee. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Gaston. Granville. Guilford. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Moore. Nash. New Hanover. Northampton. Pitt. Randolph. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.	Beaufort. Bertie. Bladen. Buncombe. Cabarrus. Cherokee. Columbus. Craven. Cumberland. Davidson. Durham. Edgecombe. Forsyth. Franklin. Gaston. Guilford. Granville. Halifax. Henderson. Johnston. Lenoir. Mecklenburg. Moore. Nash. New Hanover. Northampton. Pitt. Randolph. Richmond. Robeson. Rowan. Rutherford. Sampson. Surry. Vance. Wake. Wayne. Wilkes. Wilson.
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TABLE 1.—List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued

OHIO

1927	1928	1929	1930	1931
Allen. Ashtabula. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry. Preble. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Union. Washington. Wayne. Wood.	Allen. Ashtabula. Belmont. Butler. Clermont. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry. Preble. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Washington. Wayne. Wood.	Allen. Ashtabula. Belmont. Butler. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Perry. Preble. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Washington. Wayne. Wood.	Allen. Ashtabula. Belmont. Butler. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Geauga. Hamilton. Hancock. Hocking. Huron. Jefferson. Lake. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Perry. Pickaway. Preble. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Washington. Wayne. Wood.	Allen. Ashtabula. Belmont. Butler. Clinton. Columbiana. Coshocton. Crawford. Cuyahoga. Darke. Delaware. Erie. Fayette. Franklin. Hamilton. Hancock. Hocking. Huron. Jackson. Jefferson. Lorain. Lucas. Mahoning. Marion. Meigs. Mercer. Miami. Montgomery. Morrow. Muskingum. Perry. Pickaway. Preble. Richland. Ross. Sandusky. Scioto. Seneca. Shelby. Stark. Summit. Trumbull. Tuscarawas. Washington. Wayne. Wood.

OKLAHOMA

Carter. Kay. Le Flore. McCurtain. Muskogee. Oklahoma. Okmulgee. Ottawa. Pittsburg.	Carter. Kay. Le Flore. McCurtain. Muskogee. Okmulgee. Ottawa. Pittsburg. Seminole.	Carter. Kay. Le Flore. McCurtain. Muskogee. Okmulgee. Osage. Ottawa. Pittsburg. Seminole.	Carter. Le Flore. McCurtain. Muskogee. Okmulgee. Osage. Ottawa. Pittsburg. Seminole.	Carter. Le Flore. McCurtain. Muskogee. Okmulgee. Ottawa. Pittsburg. Pottawatomie. Seminole.
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OREGON

Clackamas. Coos. Douglas. Jackson. Klamath. Marion. Multnomah.	Clackamas. Coos. Douglas. Jackson. Klamath. Marion. Multnomah.	Clackamas. Coos. Douglas. Jackson. Klamath. Marion. Multnomah.	Clackamas. Coos. Douglas. Jackson. Klamath. Marion. Multnomah.	Clackamas. Coos. Douglas. Jackson. Klamath. Lane. Marion. Multnomah.
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TABLE 1.—List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued

PENNSYLVANIA

1927	1928	1929	1930	1931
				Allegheny. Bucks. Luzerne.

SOUTH CAROLINA

Aiken. Anderson. Beaufort. Charleston. Cherokee. Darlington. Dillon. Fairfield. Georgetown. Greenville. Greenwood. Horry. Marion. Newberry. Orangeburg. Spartanburg.	Aiken. Anderson. Beaufort. Charleston. Cherokee. Darlington. Dillon. Fairfield. Georgetown. Greenville. Greenwood. Horry. Marion. Newberry. Orangeburg. Spartanburg.	Aiken. Anderson. Beaufort. Berkeley. Charleston. Cherokee. Darlington. Dillon. Dorchester. Fairfield. Florence. Georgetown. Greenville. Greenwood. Horry. Marion. Newberry. Oconee. Orangeburg. Richland. Spartanburg.	Aiken. Anderson. Beaufort. Berkeley. Charleston. Cherokee. Darlington. Dillon. Dorchester. Fairfield. Florence. Georgetown. Greenville. Greenwood. Horry. Kershaw. Lexington. Marion. Newberry. Oconee. Orangeburg. Richland. Spartanburg.	Aiken. Anderson. Beaufort. Berkeley. Charleston. Cherokee. Darlington. Dillon. Dorchester. Fairfield. Florence. Georgetown. Greenville. Greenwood. Horry. Kershaw. Lexington. Marion. Newberry. Oconee. Orangeburg. Richland. Spartanburg.
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SOUTH DAKOTA

Brown. Pennington.	Pennington.	Pennington.	Pennington.	Pennington.
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TENNESSEE

Blount. Davidson. Dyer. Gibson. Hamilton. Lauderdale. Montgomery. Obion. Roane. Rutherford. Sevier. Shelby. Weakley. Williamson.	Blount. Bradley. Davidson. Dyer. Gibson. Hamilton. Lake. Lauderdale. Montgomery. Obion. Roane. Rutherford. Sevier. Shelby. Washington. Weakley. Williamson.	Blount. Bradley. Carter. Davidson. Dyer. Gibson. Greene. Hamilton. Knox. Lake. Lauderdale. Monroe. Montgomery. Obion. Roane. Rutherford. Sevier. Shelby. Sullivan. Washington. Weakley. Williamson. Wilson.	Bledsoe. Blount. Bradley. Carter. Clay. Davidson. Dyer. Fentress. Gibson. Giles. Greene. Grundy. Hamilton. Hardeman. Jackson. Knox. Lake. Lauderdale. Lincoln. Meigs. Monroe. Montgomery. Obion. Overton. Pickett. Rhea. Roane. Rutherford. Sequatchie. Sevier. Shelby. Sullivan. Sumner.	Bledsoe. Blount. Bradley. Carter. Clay. Davidson. Dyer. Fentress. Gibson. Giles. Greene. Grundy. Hamilton. Hardeman. Humphreys. Jackson. Knox. Lake. Lauderdale. Lewis. Lincoln. Maury. Meigs. Monroe. Montgomery. Obion. Overton. Pickett. Rhea. Roane. Rutherford. Sequatchie. Sevier.
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TABLE 1.—List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued

TENNESSEE—Continued				
1927	1928	1929	1930	1931
			Tipton. Washington. Weakley. Williamson. Wilson.	Shelby. Sullivan. Sumner. Tipton. Unicoi. Washington. Weakley. Williamson. Wilson.
TEXAS				
Cameron. Hidalgo. Jefferson. McLennan. Tarrant.	Cameron. Hidalgo. McLennan. Tarrant.	Cameron. Hidalgo. McLennan. Tarrant.	Cameron. Hidalgo. Jefferson. McLennan. Nolan. Tarrant.	Cameron. Hidalgo. Jefferson. McLennan. Nolan. Potter. Tarrant.
UTAH				
Box Elder. Davis. Morgan. Summit. Wasatch. Weber.	Box Elder. Davis. Summit. Utah. Wasatch.	Box Elder. Davis. Utah.	Box Elder. Davis. Utah.	Davis. Utah.
VIRGINIA				
Accomac. Albemarle. Arlington. Augusta. Brunswick. Fairfax. Halifax. Henrico. Isle of Wight. James City. Nansemond. Northampton. Southampton. Sussex. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Halifax. Henrico. Isle of Wight. Nansemond. Norfolk. Northampton. Princess Anne. Rockbridge. Southampton.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Greensville. Halifax. Henrico. Isle of Wight. Nansemond. Norfolk. Northampton. Princess Anne. Rockbridge. Southampton. Wise.	Accomac. Albemarle. Arlington. Augusta. Brunswick. Fairfax. Greensville. Halifax. Henrico. Isle of Wight. Nansemond. Norfolk. Northampton. Princess Anne. Rockbridge. Southampton. Wise.	Accomac. Albemarle. Amelia. ¹ Appomattox. ¹ Arlington. Augusta. Brunswick. Buckingham. ¹ Charlotte. ¹ Cumberland. ¹ Fairfax. Greensville. Halifax. Henrico. Isle of Wight. Lunenburg. ¹ Nansemond. Norfolk. Northampton. Nottaway. ¹ Powhatan. ¹ Prince Edward. ¹ Princess Anne. Rockbridge. Southampton. Wise.
WASHINGTON				
Chelan. King. Snohomish. Spokane. Walla Walla. Yakima.	Chelan. King. Snohomish. Spokane. Walla Walla. Whitman. Yakima.	Chelan. King. Snohomish. Spokane. Walla Walla. Whitman. Yakima.	Chelan. Clark. King. Snohomish. Spokane. Walla Walla. Whitman. Yakima.	Chelan. Clark. King. Snohomish. Spokane. Walla Walla. Whitman. Yakima.

¹ Included in 1 district of 9 counties.

TABLE 1.—List of counties or districts in which as of January 1, 1927, 1928, 1929, 1930, and 1931, respectively, rural sections were provided with health service under whole-time local health officers—Continued

WEST VIRGINIA

1927	1928	1929	1930	1931
Boone. Brooke. Gilmer. Hancock. Harrison. Kanawha. Logan. Marion. Marshall. Ohio. Preston. Roane. Wood.	Berkeley. Boone. Brooke. Gilmer. Hancock. Harrison. Kanawha. Lewis. Logan. Marion. Marshall. Ohio. Preston. Wood.	Berkeley. Boone. Brooke. Fayette. Gilmer. Hancock. Harrison. Kanawha. Logan. Marion. Ohio. Preston. Raleigh. Wood.	Berkeley. Boone. Brooke. Fayette. Gilmer. Hancock. Harrison. Kanawha. Logan. Marion. Monongalia. Ohio. Preston. Raleigh. Wood.	Berkeley. Boone. Brooke. Fayette. Gilmer. Hancock. Harrison. Kanawha. Logan. Marion. Marshall. Monongalia. Ohio. Preston. Raleigh. Wood.

WYOMING

Natrona.	Natrona.	Natrona.		
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Résumé of Table 1

State	Number of counties Jan. 1					Increase or decrease in 1927	Increase or decrease in 1928	Increase or decrease in 1929	Increase or decrease in 1930
	1927	1928	1929	1930	1931				
Alabama.....	30	33	50	51	54	+3	+17	+1	+3
Arizona.....	2	3	3	3	6	+1			+3
Arkansas.....	3	21	24	21	24	+18	+3	-3	+3
California.....	9	9	11	12	13		+2	+1	+1
Colorado.....	1	1	1	1	1				
Connecticut.....	1	1	1	1	1				
Delaware.....					3				+3
Florida.....	3	3	3	2	3			-1	+1
Georgia.....	24	27	31	34	30	+3	+4	+3	-4
Idaho.....					1			+2	-1
Illinois.....	3	3	4	3	2		+1	-1	-1
Iowa.....	1				2				+2
Kansas.....	9	10	10	11	12	+1	-1		+1
Kentucky.....	9	32	39	45	43	+23	+7	+6	-2
Louisiana.....	10	28	29	31	31	+18	+1	+2	
Maine.....	5	4	4	4	4	-1			
Maryland.....	6	8	9	11	14	+2	+1	+2	+3
Massachusetts.....	1	1	1	1	1				
Michigan.....			13	4	24		+3	+1	+20
Minnesota.....	1	1	1	1	1				
Mississippi.....	18	24	29	28	28	+6	+5	-1	
Missouri.....	12	14	12	13	13	+2	-2	+1	
Montana.....	3	3	3	4	4			+1	
New Mexico.....	9	8	7	7	8	-1			+1
New York.....	1	1	2	4	4		+1	+2	
North Carolina.....	37	37	39	38	39		+2	-1	+1
Ohio.....	47	47	45	46	46		-2	+1	
Oklahoma.....	9	9	10	9	9		+1	-1	
Oregon.....	5	7	7	7	8	+2			+1
Pennsylvania.....					3				+3
South Carolina.....	16	16	20	22	23		+4	+3	
South Dakota.....	2	1	1	1	1				
Tennessee.....	14	17	23	38	42	+3	+6	+15	+4
Texas.....	5	4	4	6	7	-1		+2	-1
Utah.....	6	5	3	3	2	-1	-2		-1
Virginia.....	15	14	16	17	26	-1	+2	+1	+9
Washington.....	6	7	7	8	8	+1		+1	
West Virginia.....	13	14	14	15	16	+1		+1	+1
Wyoming.....	1	1	1					-1	
Total.....	337	416	467	505	557	+70	+51	+38	+53

The accompanying map shows the location of the counties or districts in the United States in the rural sections of which local health service under the direction of whole-time local (county or district) health officers was in operation on January 1, 1931.

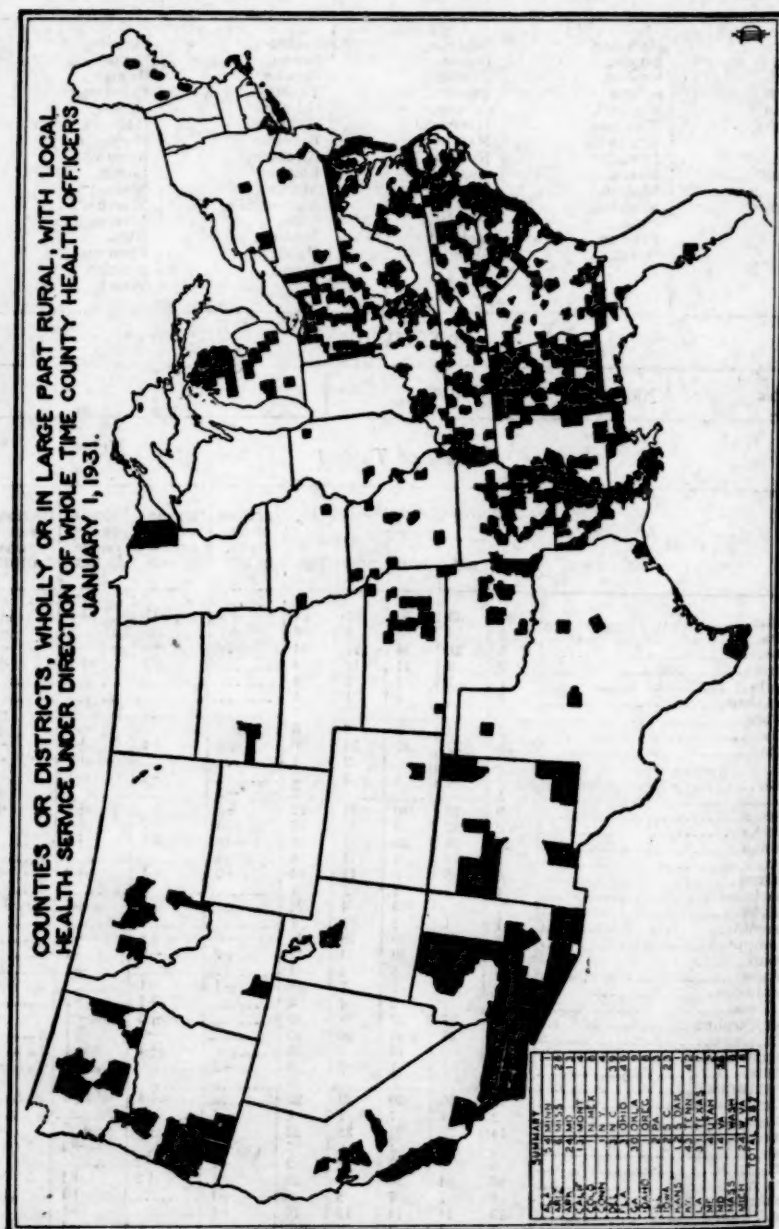


FIGURE 1.—Rural areas having whole-time health officers, 1931

Within the period January 1, 1930, to January 1, 1931, whole-time county or (local) district health service was established in 61 units

and was discontinued in 9—a net gain of 52. The largest gain in one State was that of 20 in Michigan. Delaware took the lead in the percentage of rural population under whole-time local health service, all of its three counties having been provided with full-time local organizations financed by the State. Of the States in which the counties maintain the health organizations, with or without assistance from the State health department or other sources, Alabama, with 85.49, had the highest percentage of rural population under whole-time service.

TABLE 2.—*Percentage of rural population having on January 1, 1931, local health service under whole-time local (county or district) health officers*

State	Rural population (census 1920)	Rural population with local health service under direction of whole-time health officers	Percentage of rural population with local health service under direction of whole-time health officers
Alabama.....	1,601,975	1,626,060	85.49
Arizona.....	285,717	181,066	63.37
Arkansas.....	1,471,604	601,615	40.88
California.....	1,516,655	714,727	47.13
Colorado.....	515,909	13,771	2.67
Connecticut.....	473,183	100,064	21.06
Delaware.....	115,234	115,234	100.00
Florida.....	708,433	33,422	4.72
Georgia.....	2,013,016	535,138	26.58
Idaho.....	313,828	21,041	6.67
Illinois.....	1,964,927	39,853	2.00
Indiana.....	1,462,611	0	0
Iowa.....	1,461,647	37,494	2.52
Kansas.....	1,151,165	186,708	16.22
Kentucky.....	1,815,663	762,448	43.65
Louisiana.....	1,268,061	707,551	55.80
Maine.....	475,617	51,327	6.58
Maryland.....	656,657	500,451	76.21
Massachusetts.....	418,188	13,510	3.23
Michigan.....	1,540,280	463,537	26.20
Minnesota.....	1,306,537	48,313	3.70
Mississippi.....	1,670,671	684,216	40.95
Missouri.....	1,770,248	463,291	27.87
Montana.....	356,570	35,139	9.85
Nebraska.....	891,856	0	0
Nevada.....	56,594	0	0
New Hampshire.....	192,214	0	0
New Jersey.....	702,060	0	0
New Mexico.....	316,501	100,528	33.66
New York.....	2,066,114	261,067	12.64
North Carolina.....	2,360,429	1,302,065	55.16
North Dakota.....	567,539	0	0
Ohio.....	2,139,326	1,316,535	61.54
Oklahoma.....	1,574,359	313,439	19.91
Oregon.....	464,040	214,363	46.19
Pennsylvania.....	3,097,139	456,142	14.73
Rhode Island.....	52,068	0	0
South Carolina.....	1,867,685	826,877	60.46
South Dakota.....	561,942	9,673	1.72
Tennessee.....	1,720,018	901,788	52.43
Texas.....	3,435,867	182,439	5.31
Utah.....	241,583	20,312	12.13
Vermont.....	240,845	0	0
Virginia.....	1,636,314	528,041	32.27
Washington.....	678,857	301,817	44.46
West Virginia.....	1,237,701	550,270	44.46
Wisconsin.....	1,585,163	0	0
Wyoming.....	155,468	0	0
Total.....	53,819,525	15,216,453	28.27

Of the 548 counties or districts with local health service under whole-time local (county or district) health officers at the beginning

of the present calendar year, 488, or 89 per cent, are receiving financial assistance for the support of their local health service from one or more of the following agencies: The State board of health, the United States Public Health Service, the Rockefeller Foundation.

Table 2 presents, by States, the percentage of rural population having local health service under the direction of whole-time local

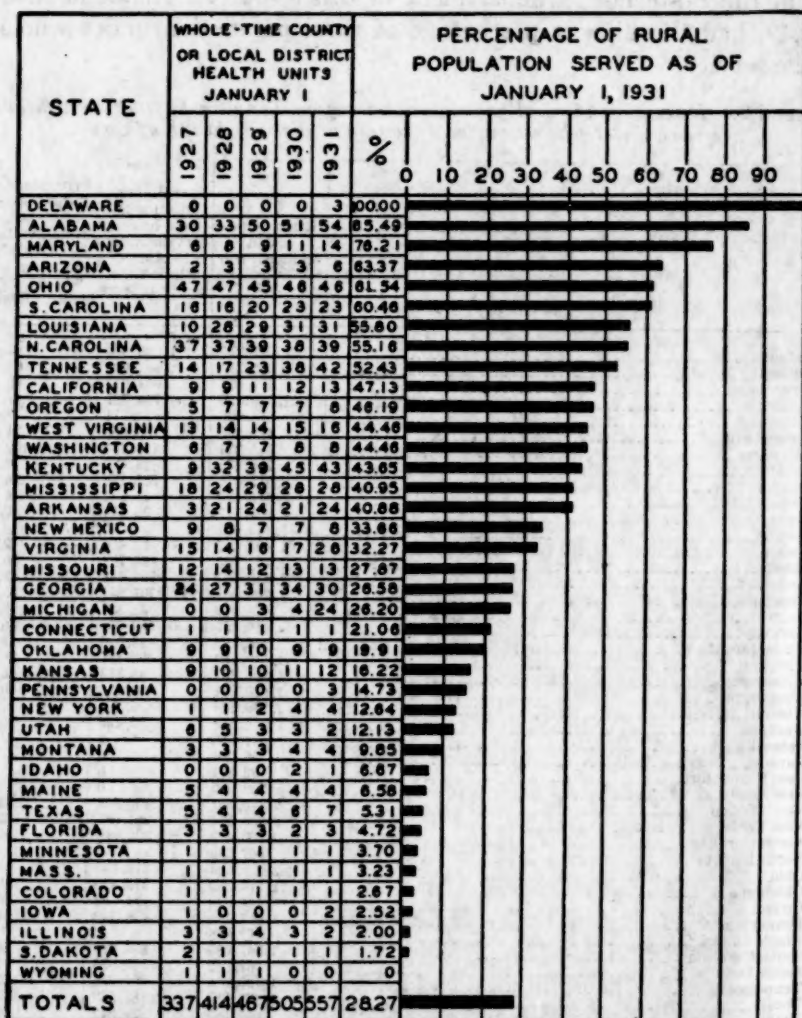


FIGURE 2.—Number of whole-time county health units, by States, 1927-1931, and percentage of rural population served on January 1, 1931

(county or district) health officers at the beginning of 1931. It will be noted that over 70 per cent of our rural population is as yet unprovided with local health service approaching adequacy.

The accompanying chart shows, by States, the number of counties or local districts with health service under the direction of whole-

time county or local district health officers as of January 1, 1927, 1928, 1929, 1930, and 1931, and the percentage of the rural population of each State receiving such service on January 1, 1931.

COURT DECISION RELATING TO PUBLIC HEALTH

License requirement for wholesale food establishments upheld.—(Illinois Supreme Court; *City of Chicago v. Arbuckle Bros.*, 176 N. E. 761; decided June 18, 1931.) Section 2004 of the Chicago municipal code defined the term "wholesale food establishment" and provided that "No person, firm or corporation shall establish, maintain or operate any wholesale food establishment without first having obtained a license as hereinafter required." Section 2009 of the code set forth the sanitary requirements governing wholesale food establishments. The defendant, a corporation engaged in the business of receiving, packing, and selling, at wholesale, coffees, teas, spices, and flavoring extracts, was convicted in the municipal court of conducting a wholesale food establishment without a license, in violation of section 2004. On appeal to the supreme court, the question presented for determination was the validity of such section.

Among the powers given to the city council by statute were the following:

50. To regulate the sale of meats, poultry, fish, butter, cheese, lard, vegetables, and all other provisions, and to provide for place and manner of selling the same and to control the location thereof.

53. To provide for and regulate the inspection of meats, poultry, fish, butter, cheese, lard, vegetables, cotton, tobacco, flour, meal and other provisions.

78. To do all acts, make all regulations, which may be necessary or expedient for the promotion of health or the suppression of disease.

The court laid down the proposition that "A municipal corporation has no power to legislate upon any subject except by the express provision of a statute giving it the power, or by clear implication from such a statute as necessarily incident to the powers expressly granted," but, after a consideration of the powers set forth, declared that "coffee, tea, spices, and flavoring extracts we regard as within the meaning of 'other provisions' mentioned in paragraphs 50 and 53, whose inspection and sale and the place and manner thereof the city council may regulate and provide for." It stated that the power to regulate included the power to license, and affirmed the judgment of the trial court.

DEATHS DURING WEEK ENDED AUGUST 22, 1931

Summary of information received by telegraph from industrial insurance companies for the week ended August 22, 1931, and corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended August 22, 1931	Corresponding week, 1930
Policies in force.....	74, 973, 572	75, 743, 912
Number of death claims.....	12, 270	13, 050
Death claims per 1,000 policies in force, annual rate.....	8. 5	9. 0
Death claims per 1,000 policies, first 34 weeks of year, annual rate.....	10. 1	9. 9

Deaths¹ from all causes in certain large cities of the United States during the week ended August 22, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

The rates published in this summary are based upon midyear population estimates derived from the 1930 census

City	Week ended Aug. 22, 1931				Corresponding week, 1930		Death rate ¹ for the first 34 weeks	
	Total deaths	Death rate ²	Deaths under 1 year	Infant mortality rate ³	Death rate ²	Deaths under 1 year	1931	1930
Total (82 cities).....	6, 882	10. 1	614	4 48	9. 5	679	12. 4	12. 3
Akron.....	39	7. 9	5	49	4. 9	3	8. 0	8. 0
Albany.....	25	10. 1	2	40	13. 1	1	14. 0	13. 2
Atlanta.....	90	16. 9	9	92	8. 1	6	15. 6	16. 2
White.....	47	(⁹)	4	63	(⁹)	1	(⁹)	(⁹)
Colored.....	43	(⁹)	5	144	(⁹)	5	(⁹)	(⁹)
Baltimore.....	173	11. 1	21	71	10. 0	17	14. 9	14. 4
White.....	119	(⁹)	14	61	(⁹)	13	(⁹)	(⁹)
Colored.....	54	(⁹)	7	109	(⁹)	4	(⁹)	(⁹)
Birmingham.....	61	11. 8	8	80	10. 0	15	14. 1	14. 2
White.....	25	(⁹)	3	51	(⁹)	8	(⁹)	(⁹)
Colored.....	36	(⁹)	5	122	(⁹)	7	(⁹)	(⁹)
Boston.....	178	11. 8	20	57	11. 3	20	14. 6	14. 5
Bridgeport.....	18	6. 4	3	50	9. 6	0	11. 4	11. 4
Buffalo.....	131	11. 8	11	45	8. 6	9	13. 6	13. 3
Cambridge.....	21	9. 6	2	40	9. 2	2	12. 6	12. 2
Camden.....	29	12. 7	5	87	7. 5	3	14. 8	13. 9
Canton.....	17	8. 3	1	23	8. 4	3	10. 5	10. 4
Chicago.....	553	8. 3	52	46	8. 5	63	11. 2	10. 7
Cincinnati.....	111	12. 7	10	60	12. 7	8	16. 4	15. 9
Cleveland.....	172	9. 8	10	29	10. 2	27	11. 5	11. 5
Columbus.....	68	12. 0	5	49	8. 9	3	14. 1	16. 2
Dallas.....	50	9. 6	7	(⁹)	12. 1	9	11. 8	12. 1
White.....	30	(⁹)	4	(⁹)	(⁹)	7	(⁹)	(⁹)
Colored.....	20	(⁹)	3	(⁹)	(⁹)	2	(⁹)	(⁹)
Dayton.....	39	9. 8	2	28	9. 8	2	12. 2	10. 5
Denver.....	60	10. 7	5	48	15. 7	15	14. 3	14. 9
Des Moines.....	19	6. 9	0	0	10. 6	1	11. 4	12. 1
Detroit.....	239	7. 5	24	38	7. 5	35	8. 6	9. 7
Duluth.....	15	7. 7	1	25	9. 8	2	11. 1	11. 4
El Paso.....	19	9. 4	5	(⁹)	17. 7	9	16. 4	18. 2
Erie.....	26	11. 5	1	19	12. 6	3	10. 8	11. 6
Fall River.....	21	9. 5	3	68	7. 2	1	11. 8	12. 4
Flint.....	19	6. 0	3	38	8. 3	9	7. 3	9. 5
Fort Worth.....	24	7. 5	4	(⁹)	11. 1	9	11. 1	11. 4
White.....	17	(⁹)	2	(⁹)	(⁹)	7	(⁹)	(⁹)
Colored.....	7	(⁹)	2	(⁹)	(⁹)	2	(⁹)	(⁹)
Grand Rapids.....	23	7. 0	1	15	5. 5	2	9. 3	10. 6
Houston.....	73	12. 3	11	(⁹)	11. 3	7	11. 4	12. 4
White.....	47	(⁹)	8	(⁹)	(⁹)	6	(⁹)	(⁹)
Colored.....	26	(⁹)	3	(⁹)	(⁹)	1	(⁹)	(⁹)
Indianapolis.....	103	14. 5	12	99	12. 3	10	14. 3	15. 1
White.....	84	(⁹)	9	85	(⁹)	8	(⁹)	(⁹)
Colored.....	19	(⁹)	3	201	(⁹)	2	(⁹)	(⁹)

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended August 22, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930—Continued

City	Week ended Aug. 22, 1931				Corresponding week, 1930		Death rate for the first 34 weeks	
	Total deaths	Death rate	Deaths under 1 year	Infant mortality rate	Death rate	Deaths under 1 year	1931	1930
Jersey City.....	49	8.0	5	44	7.1	5	12.0	11.7
Kansas City, Kans.....	25	10.6	4	82	14.5	0	13.2	11.4
White.....	22		4	98		0		
Colored.....	3	(⁹)	0	0	(⁹)	0	(⁹)	(⁹)
Kansas City, Mo.....	64	8.2	6	46	12.1	6	13.7	13.6
Knoxville.....	16	7.6	2	43	11.8	5	12.8	14.3
White.....	12		2	48		0		
Colored.....	4	(⁹)	0	0	(⁹)	5	(⁹)	(⁹)
Long Beach.....	23	7.9	0	0	9.8	3	10.0	10.1
Los Angeles.....	240	9.5	15	44	8.2	12	10.9	11.2
Louisville.....	83	14.0	11	94	10.0	5	14.7	14.0
White.....	65		6	59		5		
Colored.....	18	(⁹)	5	331	(⁹)	0	(⁹)	(⁹)
Lowell ?.....	15	7.8	1	25	15.0	5	12.8	14.0
Lynn.....	10	5.1	0	0	7.6	0	10.0	11.0
Memphis.....	78	15.7	11	116	15.2	9	16.8	17.9
White.....	39		5	83		5		
Colored.....	39	(⁹)	6	174	(⁹)	4	(⁹)	(⁹)
Miami.....	31	14.4	2	51	7.5	1	12.2	11.5
White.....	20		1	35		1		
Colored.....	11	(⁹)	1	88	(⁹)	0	(⁹)	(⁹)
Milwaukee.....	81	7.2	7	30	7.0	6	9.7	9.8
Minneapolis.....	80	8.8	2	13	6.4	3	11.7	10.8
Nashville.....	40	13.4	10	149	13.9	4	17.3	17.1
White.....	23		5	100		3		
Colored.....	17	(⁹)	5	295	(⁹)	1	(⁹)	(⁹)
New Bedford ?.....	18	8.3	2	53	6.0	0	12.6	11.4
New Haven.....	36	11.5	3	57	9.9	2	12.6	13.4
New Orleans.....	135	15.1	18	99	15.5	25	17.3	17.9
White.....	83		11	91		15		
Colored.....	52	(⁹)	7	114	(⁹)	10	(⁹)	(⁹)
New York.....	1,310	9.6	107	45	8.0	108	11.7	11.2
Bronx Borough.....	172	6.7	13	29	5.7	11	8.6	8.2
Brooklyn Borough.....	466	9.3	36	38	7.6	47	10.7	10.3
Manhattan Borough.....	501	14.4	47	80	11.3	41	17.7	16.7
Queens Borough.....	135	6.1	11	30	5.4	5	7.5	7.3
Richmond Borough.....	36	11.5	0	0	11.5	4	14.0	14.7
Newark, N. J.....	75	8.8	4	21	7.8	5	12.0	12.5
Oakland.....	49	8.7	3	38	10.0	4	10.7	11.1
Oklahoma City.....	25	6.6	3	41	10.6	6	11.2	10.8
Omaha.....	36	8.7	4	45	9.2	3	14.2	14.1
Paterson.....	42	15.8	1	17	8.3	4	13.9	12.5
Peoria.....	17	8.2	0	0	10.4	1	13.1	12.9
Philadelphia.....	388	10.3	45	65	10.9	39	13.7	13.0
Pittsburgh.....	138	10.6	15	52	9.4	8	15.1	14.2
Portland, Oreg.....	47	8.0	1	12	10.7	3	11.8	12.6
Providence.....	50	10.2	2	18	7.4	3	13.2	13.5
Richmond.....	44	12.4	2	29	12.2	2	16.1	15.4
White.....	25		1	22		1		
Colored.....	19	(⁹)	1	43	(⁹)	1	(⁹)	(⁹)
Rochester.....	72	11.3	5	46	10.3	8	12.2	11.8
St. Louis.....	194	12.2	10	34	10.6	21	16.0	14.8
St. Paul.....	52	9.8	5	52	7.1	2	11.2	10.3
Salt Lake City ?.....	32	11.7	3	45	10.7	2	12.4	12.8
San Antonio.....	48	10.4	5	(⁹)	16.3	11	15.1	17.6
San Diego.....	41	13.7	1	20	12.2	1	13.9	14.5
San Francisco.....	204	16.4	9	60	11.9	4	13.3	13.2
Schenectady.....	23	12.5	3	88	10.3	2	10.8	11.5
Seattle.....	68	9.5	1	9	12.4	3	11.6	11.1
Somerville.....	15	7.4	3	112	8.0	1	9.4	10.1
South Bend.....	13	6.3	3	75	7.9	1	8.3	9.1
Spokane.....	18	8.1	2	52	8.6	1	12.5	12.5
Springfield, Mass.....	10	6.5	0	0	9.0	4	12.1	12.0
Syracuse.....	45	11.0	3	36	10.9	7	11.9	12.0
Tacoma.....	9	4.4	0	0	12.2	2	12.2	12.9
Toledo.....	57	10.1	2	18	9.3	1	12.3	12.9
Trenton.....	34	14.3	1	17	13.1	4	17.1	17.1
Utica.....	22	11.2	4	104	8.7	1	14.5	15.3

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended August 22, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930—Continued

City	Week ended Aug. 22, 1931				Corresponding week, 1930		Death rate for the first 34 weeks	
	Total deaths	Death rate	Deaths under 1 year	Infant mortality rate	Death rate	Deaths under 1 year	1931	1930
Washington, D. C.....	128	13.5	9	50	12.2	19	16.2	15.6
White.....	70		2	16		12		
Colored.....	58	(⁶)	7	120	(⁶)	7	(⁶)	(⁶)
Waterbury.....	19	9.8	5	151	10.4	3	9.8	10.3
Wilmington, Del. ¹	27	13.2	4	86	11.7	1	14.5	14.7
Worcester.....	27	7.1	1	14	10.7	4	12.6	13.3
Yonkers.....	28	10.5	3	79	5.8	1	8.9	8.3
Youngstown.....	26	7.8	3	42	7.9	4	10.6	10.4

¹ Deaths of nonresidents are included. Stillbirths are excluded.

² These rates represent annual rates per 1,000 population, as estimated for 1931 and 1930 by the arithmetical method.

³ Deaths under 1 year of age per 1,000 live births. Cities left blank are not in the registration area for births.

⁴ Data for 77 cities.

⁵ Deaths for week ended Friday.

⁶ For the cities for which deaths are shown by color, the percentage of colored population in 1930 was as follows: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Miami, 31; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

⁷ Population Apr. 1, 1930; decreased 1920 to 1930, no estimate made.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended August 29, 1931, and August 30, 1930

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 29, 1931, and August 30, 1930

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930
New England States:								
Maine.....		3	1	2	3	3	0	0
New Hampshire.....	1	1				2	0	0
Vermont.....		1			1		0	0
Massachusetts.....	29	56	4	1	18	47	2	2
Rhode Island.....		4			18		2	0
Connecticut.....	3	6		2	3	2	1	1
Middle Atlantic States:								
New York.....	53	52	14	15	96	75	5	8
New Jersey.....	17	28	1	8	18	19	2	3
Pennsylvania.....	35	36			69	48	13	17
East North Central States:								
Ohio.....	32	24	12	9	37	12	4	6
Indiana.....	10	8	12	9	17	1	5	5
Illinois.....	52	68		4	25	10	3	5
Michigan.....	14	23			12	22	2	4
Wisconsin.....	10	5	10	18	18	44	2	4
West North Central States:								
Minnesota.....	5	14	1	3	3	2	2	1
Iowa.....	1	6			2		1	0
Missouri.....	22	19	3		3	10	3	5
North Dakota.....	2	4			2		0	0
South Dakota.....	4	4			1		1	0
Nebraska.....	5	1		1	3	6	1	0
Kansas.....	6	11			1	15	0	4
South Atlantic States:								
Delaware.....		1				1		0
Maryland ¹	13	16	1	7	5	4	2	1
District of Columbia.....	9	4	2		1	1	0	0
Virginia.....								
West Virginia.....	7	9		4	31	1	3	0
North Carolina ²	42	67	3		10	4	0	0
South Carolina ³	14	21	144	138	5		0	0
Georgia ³	23	16	2	4	31	4	0	0
Florida.....	6	5	1			4	0	0

¹ New York City only.

² Week ended Friday.

³ Typhus fever, 1931, 15 cases: 1 case in North Carolina; 1 case in South Carolina; 5 cases in Georgia; 3 cases in Alabama; and 5 cases in Texas.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 29, 1931, and August 30, 1930—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930
East South Central States:								
Kentucky.....	24				20		2	0
Tennessee.....	16	10	9	4	3		2	1
Alabama ¹	57	16	6	6	4	27	0	2
Mississippi.....	50	14					1	1
West South Central States:								
Arkansas.....	22	1	5	9	2		1	0
Louisiana.....	24	8	1	6	5	3	0	3
Oklahoma ¹	23	3	12	2		1	0	3
Texas ¹	16	13	3	18	3	2	0	0
Mountain States:								
Montana.....	5				13	2	0	2
Idaho.....	1				1		1	0
Wyoming.....					1		0	0
Colorado.....	3	12			5	5	0	2
New Mexico.....		10				10	0	
Arizona.....		2					2	1
Utah ¹	1		3	4			0	2
Pacific States:								
Washington.....	3	2			4	6	0	0
Oregon.....	5	3	10	1	2	8	0	0
California.....	30	24	15	15	40	44	2	4

Division and State	Pollomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930
New England States:								
Maine.....	6	5	7	12	0	0	1	5
New Hampshire.....	4	0	1	1	0	0	0	2
Vermont.....	5	0	2	2	4	0	0	1
Massachusetts.....	135	23	65	42	0	0	10	12
Rhode Island.....	20	1	6	4	0	0	6	3
Connecticut.....	134	3	9	8	0	0	9	1
Middle Atlantic States:								
New York.....	612	29	93	42	2	0	62	30
New Jersey.....	103	1	26	16	0	0	11	19
Pennsylvania.....	9	7	51	53	0	0	41	55
East North Central States:								
Ohio.....	18	28	103	50	3	5	20	39
Indiana.....	3	4	16	10	9	15	17	19
Illinois.....	38	19	63	60	11	8	43	41
Michigan.....	76	5	67	41	7	7	14	21
Wisconsin.....	61	5	14	27	0	2	3	9
West North Central States:								
Minnesota.....	39	19	16	14	1	1	4	5
Iowa.....	8	6	8	5	8	6	3	1
Missouri.....	4	19	16	17	2	1	14	13
North Dakota.....	0	1	1	5	3	1	10	16
South Dakota.....	0	9	1	1	1	4	4	2
Nebraska.....	1	6	6	5	1	4	5	0
Kansas.....	1	48	18	12	0	7	7	18
South Atlantic States:								
Delaware.....		0	3	1		0	3	8
Maryland ¹	1	5	12	9	0	0	32	38
District of Columbia.....	0	0	3	4	0	0	2	12
Virginia.....	2							
West Virginia.....	10	1	13	10	0	7	38	73
North Carolina ¹	4	2	33	45	0	1	32	40
South Carolina ¹	2	0	11	8	0	0	69	48
Georgia ¹	7	0	40	4	7	0	65	35
Florida.....	0	0	1	5	0	0	1	1

¹ Week ended Friday.

² Typhus fever, 1931, 15 cases: 1 case in North Carolina; 1 case in South Carolina; 5 cases in Georgia; 3 cases in Alabama; and 5 cases in Texas.

³ Figures for 1931 are exclusive of Oklahoma City and Tulsa, and for 1930 are exclusive of Tulsa only.

⁴ Includes nonresidents.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 29, 1931, and August 30, 1930—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930	Week ended Aug. 29, 1931	Week ended Aug. 30, 1930
East South Central States:								
Kentucky.....	1	1	19	2	5	3	47	39
Tennessee.....	1	2	27	21	5	0	79	54
Alabama ¹	0	3	23	1	0	1	39	30
Mississippi.....	2	4	14	1	3	0	46	27
West South Central States:								
Arkansas.....	1	8	3	3	9	2	65	38
Louisiana.....	0	13	16	1	2	0	55	36
Oklahoma ²	0	8	8	4	4	11	31	43
Texas ³	1	1	8	9	1	7	14	12
Mountain States:								
Montana.....	3	0	10	5	2	0	0	1
Idaho.....	0	0	7	1	0	0	3	0
Wyoming.....	1	2	0	3	0	0	1	1
Colorado.....	0	2	15	8	6	1	2	15
New Mexico.....	1	2	4	1	0	10	6	15
Arizona.....	0	0	0	1	0	0	5	11
Utah ⁴	0	0	2	3	0	0	1	4
Pacific States:								
Washington.....	0	1	11	9	25	11	7	5
Oregon.....	1	2	9	7	11	3	6	5
California.....	6	49	54	27	5	5	19	13

¹ Week ended Friday.

² Typhus fever, 1931, 15 cases: 1 case in North Carolina; 1 case in South Carolina; 5 cases in Georgia; 3 cases in Alabama; and 5 cases in Texas.

⁴ Figures for 1931 are exclusive of Oklahoma City and Tulsa, and for 1930 are exclusive of Tulsa only.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Menin- gococ- cus menin- gitis	Dipha- theria	Influen- za	Mal- aria	Meas- les	Pel- lagra	Pollo- mye- litis	Scarlet feve	Small- pox	Ty- phoid fever
<i>June, 1931</i>										
Delaware.....		6	1		267		0	20	0	1
<i>July, 1931</i>										
Arkansas.....	1	9		183	12	484	0	9	25	155
California.....	7	233	58	13	936	11	24	210	43	80
Montana.....	1	2	3		54		4	22	8	14
Nevada.....	1	1	1	1	27		0	2	0	3
Oregon.....	1	10	29	1	44		0	21	49	17
Rhode Island.....		30	1		378		10	47	0	1
South Dakota.....		13	3		6		4	22	8	17
Texas.....	3	69	4	1,054		5	5	83		127
Virginia.....	6	46	312	60	234	97	9	71	12	251

<i>June, 1931</i>		<i>July, 1931</i>	
Delaware:	Cases	Delaware:	Cases
Chicken pox.....	8	Chicken pox.....	1
Mumps.....	18	Arkansas.....	16
Whooping cough.....	26	California.....	316
		Montana.....	34
		Oregon.....	44
Actinomycosis:		Rhode Island.....	7
California.....	2	South Dakota.....	20
South Dakota.....	1	Virginia.....	71

	Cases		Cases
Diarrhea and dysentery:		Scabies:	
Virginia.....	2,377	Oregon.....	1
Dysentery:		Septic sore throat:	
California (amebic).....	3	California.....	10
California (bacillary).....	17	Montana.....	8
Food poisoning:		Oregon.....	8
California.....	92	Rhode Island.....	2
German measles:		Tetanus:	
California.....	25	California.....	1
Montana.....	4	Tick paralysis:	
Rhode Island.....	1	Montana.....	1
Granuloma, coccidioidal:		Trachoma:	
California.....	1	Arkansas.....	3
Hookworm disease:		California.....	10
Arkansas.....	3	Oregon.....	1
Impetigo contagiosa:		South Dakota.....	4
Oregon.....	12	Trichinosis:	
Leprosy:		California.....	6
California.....	1	Tularaemia:	
Lethargic encephalitis:		Arkansas.....	2
California.....	3	California.....	4
Mumps:		Montana.....	1
Arkansas.....	24	Nevada.....	5
California.....	326	Virginia.....	2
Montana.....	2	Typhus fever:	
Oregon.....	83	Virginia.....	7
Rhode Island.....	56	Undulant fever:	
South Dakota.....	8	California.....	12
Ophthalmia neonatorum:		Montana.....	1
California.....	2	Oregon.....	1
Montana.....	1	Virginia.....	2
Paratyphoid fever:		Vincent's angina:	
California.....	7	Oregon.....	15
Oregon.....	1	Whooping cough:	
Texas.....	8	Arkansas.....	42
Rabies in animals:		California.....	820
California.....	43	Montana.....	58
Rocky Mountain spotted or tick fever:		Nevada.....	9
Montana.....	3	Oregon.....	56
Nevada.....	2	Rhode Island.....	43
Oregon.....	1	South Dakota.....	36
Virginia.....	1	Virginia.....	489

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of April, 1931, by departments of health of certain States to other State health departments

Disease	California	Connecticut	Florida	Illinois	Kansas	Minnesota	New York	Oregon
Chicken pox.....							1	
Gonorrhea.....						2		
Measles.....							2	
Scarlet fever.....							2	
Smallpox.....				1				
Syphilis.....					7	2		
Tuberculosis.....	2			1		35		3
Typhoid fever.....	1	1	1					
Whooping cough.....							1	

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 33,140,000. The estimated population of the 89 cities reporting deaths is more than 31,595,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended August 22, 1931, and August 23, 1930

	1931	1930	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
46 States.....	559	574	
96 cities.....	192	210	371
Measles:			
45 States.....	574	559	
96 cities.....	185	174	
Meningococcus meningitis:			
46 States.....	88	94	
96 cities.....	31	38	
Poliomyelitis:			
46 States.....	1,135	332	
Scarlet fever:			
46 States.....	822	617	
96 cities.....	278	205	228
Smallpox:			
46 States.....	103	149	
96 cities.....	7	12	12
Typhoid fever:			
46 States.....	960	1,009	
96 cities.....	133	118	160
<i>Deaths reported</i>			
Influenza and pneumonia:			
89 cities.....	303	283	
Smallpox:			
89 cities.....	0	0	

City reports for week ended August 22, 1931

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded, and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1922 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland.....	0	1	0		0	0	0	1
New Hampshire:								
Concord.....	0	0	0		0	0	0	0
Nashua.....	0	0	1		0	1	0	0
Vermont:								
Barre.....	0	0	0		0	0	0	1
Burlington.....	1	0	0		0	0	1	0
Massachusetts:								
Boston.....	7	13	19		0	5	4	8
Fall River.....	0	1	2		0	4	0	1
Springfield.....	0	1	0		0	1	4	0
Worcester.....	0	3	4		0	1	4	1
Rhode Island:								
Pawtucket.....	0	0	0		0	0	0	0
Providence.....	0	2	1		0	14	1	1
Connecticut:								
Bridgeport.....	0	2	1	1	1	1	0	1
Hartford.....	0	2	1		0	0	1	1
New Haven.....	0	0	0		0	0	1	0

City reports for week ended August 22, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC								
New York:								
Buffalo.....	1	7	3	1	0	0	2	0
New York.....	14	83	30	6	2	25	12	83
Rochester.....	1	2	1		0	13	0	3
Syracuse.....	0	1	1		0	6	0	1
New Jersey:								
Camden.....	0	2	1		0	1	0	0
Newark.....	2	6	0		0	3	4	3
Trenton.....	0	0	0		0	5	1	0
Pennsylvania:								
Philadelphia.....	6	26	2	3	1	2	6	19
Pittsburgh.....	0	9	5		1	1	6	10
Reading.....	0	0	0		0	0	0	0
EAST NORTH CENTRAL								
Ohio:								
Cincinnati.....	0	3	3		0	0	0	4
Cleveland.....	4	15	2		0	12	12	9
Columbus.....	0	2	1		0	0	0	1
Toledo.....	1	3	3		0	2	0	2
Indiana:								
Fort Wayne.....	0	1	2		0	0	0	1
Indianapolis.....	0	2	0		0	0	2	9
South Bend.....	0	0	0		0	1	0	1
Terre Haute.....		1						
Illinois:								
Chicago.....	11	50	26	2	3	29	7	16
Springfield.....	0	0	0		0	0	0	0
Michigan:								
Detroit.....	3	23	6		0	2	5	9
Flint.....	1	1	1		0	2	1	0
Grand Rapids.....	0	0	0		0	0	0	0
Wisconsin:								
Kenosha.....	0	0	0		0	1	5	0
Madison.....	1	1	5		0	0	8	
Milwaukee.....	10	6	3		0	14	11	2
Racine.....	0	0	0		0	0	10	0
Superior.....	1	0	1		0	0	1	0
WEST NORTH CENTRAL								
Minnesota:								
Duluth.....	2	0	0		0	1	0	0
Minneapolis.....	1	9	4		1	0	2	0
St. Paul.....		3						
Iowa:								
Davenport.....	0	1	0			0	0	
Des Moines.....	0	1	0			0	0	
Sioux City.....	1	0	1			0	0	
Waterloo.....	0	0	0			0	0	
Missouri:								
Kansas City.....	0	1	1		0	4	2	3
St. Joseph.....	0	0	0		0	0	0	2
St. Louis.....	2	13	7		0	0	1	4
North Dakota:								
Fargo.....	0	1	0		0	0	0	0
Grand Forks.....	0	0	0			0	0	
South Dakota:								
Aberdeen.....	3	0	0			0	0	
Nebraska:								
Omaha.....	0	2	2		0	2	1	2
Kansas:								
Topeka.....	0	0	0		0	0	5	0
Wichita.....	3	0	0		0	0	1	0
SOUTH ATLANTIC								
Delaware:								
Wilmington.....	1	0	0		0	0	4	2
Maryland:								
Baltimore.....	4	11	5	1	1	2	2	10
Cumberland.....	0	0	0		0	0	0	1
Frederick.....	0	0	0		0	0	0	0

City reports for week ended August 22, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths reported
		Cases, estimated expect- ancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC— continued								
District of Columbia: Washington.....	6	6	1	1	1	1	0	
Virginia:								
Lynchburg.....	0	1	0	-----	0	0	1	0
Norfolk.....	0	1	0	-----	0	0	0	2
Richmond.....	0	5	0	-----	0	0	0	2
Roanoke.....	0	1	0	-----	0	2	0	2
West Virginia:								
Charleston.....	0	0	0	-----	0	0	0	0
Wheeling.....	0	0	0	-----	0	0	0	2
North Carolina:								
Raleigh.....	0	0	0	-----	0	0	0	0
Wilmington.....	0	0	1	-----	0	0	0	0
Winston-Salem.....	0	1	1	-----	0	4	5	1
South Carolina:								
Charleston.....	0	0	0	5	-----	1	0	0
Columbia.....	0	1	1	-----	0	0	0	2
Greenville.....	0	0	0	-----	0	0	0	0
Georgia:								
Atlanta.....	0	2	3	1	-----	0	0	6
Brunswick.....	0	0	0	-----	0	0	0	1
Savannah.....	0	0	0	1	-----	0	0	2
Florida:								
Miami.....	0	1	1	-----	0	0	1	0
Tampa.....	0	0	0	-----	0	0	0	0
EAST SOUTH CENTRAL								
Kentucky:								
Covington.....	0	0	0	-----	0	0	0	0
Tennessee:								
Memphis.....	1	1	1	-----	0	1	0	3
Nashville.....	0	1	1	-----	0	2	0	2
Alabama:								
Birmingham.....	0	2	3	1	-----	1	0	2
Mobile.....	0	0	0	-----	0	0	0	2
Montgomery.....	0	0	1	1	-----	0	0	-----
WEST SOUTH CEN- TRAL								
Arkansas:								
Fort Smith.....	0	0	2	-----	-----	0	0	-----
Little Rock.....	0	0	0	-----	0	0	0	2
Louisiana:								
New Orleans.....	0	5	12	-----	0	0	0	5
Shreveport.....	1	0	0	-----	0	0	0	0
Oklahoma:								
Muskogee.....	0	0	3	-----	0	0	0	0
Oklahoma City.....	1	0	3	3	-----	0	0	0
Tulsa.....	0	1	0	-----	-----	0	0	-----
Texas:								
Dallas.....	0	4	2	-----	0	1	0	1
Fort Worth.....	0	0	2	-----	0	0	0	0
Galveston.....	0	0	0	-----	0	0	0	0
Houston.....	0	0	1	-----	0	1	0	7
San Antonio.....	0	2	3	-----	0	0	0	2
MOUNTAIN								
Montana:								
Billings.....	0	0	0	-----	0	5	0	0
Great Falls.....	1	0	0	-----	0	1	0	0
Helena.....	0	0	0	-----	0	0	0	0
Missoula.....	0	0	0	-----	0	1	0	0
Idaho:								
Boise.....	0	1	0	-----	0	1	0	1
Colorado:								
Denver.....	5	6	5	-----	0	0	0	4
Pueblo.....	1	1	0	-----	0	0	0	0
New Mexico:								
Albuquerque.....	0	0	0	-----	0	0	0	1
Utah:								
Salt Lake City.....	4	1	0	-----	0	0	1	0
Nevada:								
Reno.....	0	0	0	-----	0	0	0	0

City reports for week ended August 22, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
PACIFIC								
Washington:								
Seattle.....	2	2	1	1	-----	1	2	-----
Spokane.....	0	1	0	3	-----	0	0	-----
Tacoma.....	0	1	0	-----	0	0	2	0
Oregon:								
Portland.....	4	3	2	-----	0	0	0	1
Salem.....	0	0	0	1	0	0	1	0
California:								
Los Angeles.....	3	19	12	4	3	8	6	15
Sacramento.....	0	0	0	-----	0	0	0	3
San Francisco.....	2	6	5	1	0	2	2	4

Division, State, and city	Scarlet fever		Smallpox			Tuber- culo- sis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
NEW ENGLAND											
Maine:											
Portland.....	0	0	0	0	0	0	1	1	0	8	16
New Hampshire:											
Concord.....	0	0	0	0	0	0	0	0	0	0	5
Nashua.....	0	0	0	0	0	0	0	0	0	0	-----
Vermont:											
Barre.....	0	0	0	0	0	0	0	0	0	2	4
Burlington.....	1	0	0	0	0	0	0	0	0	0	10
Massachusetts:											
Boston.....	15	21	0	0	0	7	3	0	0	34	178
Fall River.....	0	2	0	0	0	1	1	0	0	2	21
Springfield.....	1	1	0	0	0	1	0	1	1	2	20
Worcester.....	2	6	0	0	0	5	0	0	0	12	27
Rhode Island:											
Pawtucket.....	0	0	0	0	0	0	0	0	0	0	7
Providence.....	2	8	0	0	0	2	1	0	0	9	80
Connecticut:											
Bridgeport.....	2	1	0	0	0	1	0	0	0	0	18
Hartford.....	1	2	0	0	0	5	1	0	0	5	45
New Haven.....	1	0	0	0	0	1	1	0	0	0	36
MIDDLE ATLANTIC											
New York:											
Buffalo.....	5	4	0	0	0	7	1	1	1	11	129
New York.....	23	33	0	0	0	103	34	19	3	167	1,310
Rochester.....	2	7	0	0	0	0	0	1	0	4	68
Syracuse.....	1	8	0	0	0	2	0	0	0	14	45
New Jersey:											
Camden.....	0	0	0	0	0	2	0	1	0	3	29
Newark.....	3	1	0	0	0	6	2	1	0	136	73
Trenton.....	1	0	0	0	0	2	0	0	0	0	34
Pennsylvania:											
Philadelphia.....	14	21	0	0	0	32	8	4	0	106	386
Pittsburgh.....	7	9	0	0	0	6	2	3	1	49	138
Reading.....	0	0	0	0	0	0	0	1	0	2	19
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	4	16	0	0	0	9	2	0	0	10	111
Cleveland.....	9	14	0	0	0	17	3	0	0	78	172
Columbus.....	2	1	0	0	0	5	0	2	0	1	66
Toledo.....	2	3	1	0	0	4	2	0	0	21	57
Indiana:											
Fort Wayne.....	0	1	0	0	0	3	0	0	0	1	17
Indianapolis.....	2	1	0	0	0	2	1	2	1	20	-----
South Bend.....	1	0	0	0	0	0	0	0	0	1	13
Terre Haute.....	0	-----	0	-----	-----	-----	0	-----	-----	-----	-----

City reports for week ended August 22, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths reported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
EAST NORTH CENTRAL—CON.											
Illinois:											
Chicago.....	24	24	1	0	0	36	5	6	0	152	553
Springfield.....	0	0	0	0	0	0	1	2	0	0	17
Michigan:											
Detroit.....	21	20	1	0	0	21	4	6	0	158	230
Flint.....	3	1	0	0	0	2	0	0	0	0	19
Grand Rapids.....	3	6	0	0	0	0	0	0	0	3	23
Wisconsin:											
Kenosha.....	0	2	0	0	0	0	0	0	0	1	6
Madison.....	1	0	0	0	0	0	1	1	0	2	2
Milwaukee.....	4	6	0	0	0	5	1	0	0	57	81
Racine.....	1	1	0	0	0	0	0	0	0	12	13
Superior.....	1	0	0	0	0	0	0	0	0	0	5
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	3	1	0	0	0	0	1	0	0	1	15
Minneapolis.....	10	7	1	2	0	3	1	2	0	6	80
St. Paul.....	6		0				1				
Iowa:											
Davenport.....	0	0	1	0			0	0		0	
Des Moines.....	2	2	1	1			0	0		0	19
Sioux City.....	0	0	0	0			0	1		5	
Waterloo.....	0	0	0	0			0	1		0	
Missouri:											
Kansas City.....	2	1	0	0	0	5	2	1	1	3	64
St. Joseph.....	0	0	0	0	0	0	1	0	0	4	22
St. Louis.....	8	1	1	0	0	15	7	4	0	37	194
North Dakota:											
Fargo.....	1	0	0	0	0	0	0	0	0	9	7
Grand Forks.....	1	0	0	0	0		0	0		0	
South Dakota:											
Aberdeen.....	0	0	0	0			0	0		1	
Nebraska:											
Omaha.....	1	0	1	1	0	3	1	1	0	1	36
Kansas:											
Topeka.....	1	0	0	0	0	1	0	0	0	2	13
Wichita.....	1	0	0	0	0	1	1	0	0	0	16
SOUTH ATLANTIC											
Delaware:											
Wilmington.....	0	0	0	0	0	1	0	0	0	3	27
Maryland:											
Baltimore.....	4	4	0	0	0	12	8	7	0	84	13
Cumberland.....	0	0	0	0	0	0	1	2	0	0	16
Frederick.....	0	1	0	0	0	0	0	0	0	0	5
District of Colum- bia:											
Washington.....	4	6	0	0	0	11	4	2	0	10	128
Virginia:											
Lynchburg.....	0	0	0	0	0	0	1	5	2	0	8
Norfolk.....	1	3	1	0	0	3	1	1	0	1	
Richmond.....	2	4	0	0	0	3	2	2	0	0	36
Roanoke.....	0	0	0	0	0	1	1	0	0	0	15
West Virginia:											
Charleston.....	0	0	0	0	0	0	1	1	0	0	5
Wheeling.....	0	0	0	0	0	0	0	1	0	0	15
North Carolina:											
Raleigh.....	0	0	0	0	0	0	0	0	0	1	22
Wilmington.....	0	0	0	0	0	0	1	0	0	5	
Winston-Salem.....	1	0	0	0	0	0	2	0	1	19	12
South Carolina:											
Charleston.....	0	0	0	0	0	1	2	3	0	0	20
Columbia.....	0	0	0	0	0	0	1	1	0	0	21
Greenville.....	0	0	0	0	0	0	0	0	0	0	
Georgia:											
Atlanta.....	3	3	1	2	0	8	4	1	0	2	90
Brunswick.....	0	0	0	0	0	0	0	0	0	0	4
Savannah.....	0	0	0	0	0	4	0	2	0	0	29

City reports for week ended August 22, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- cul- osis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
SOUTH ATLANTIC— continued											
Florida:											
Miami.....	0	0	0	0	0	2	0	0	0	0	315
Tampa.....	0	0	0	0	0	1	0	1	0	0	1
EAST SOUTH CENTRAL											
Kentucky:											
Covington....	0	0	1	0	0	2	0	0	0	0	18
Tennessee:											
Memphis....	1	1	1	0	0	5	10	1	1	26	78
Nashville....	0	0	0	0	0	2	6	2	0	3	40
Alabama:											
Birmingham..	2	2	0	0	0	5	5	4	2	6	61
Mobile.....	0	0	0	0	0	2	0	0	0	0	24
Montgomery...	1	0	0	0			1	5		0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith....	0	0	0	0			0	0		0	
Little Rock...	0	0	0	0	0	4	2	0	0	0	8
Louisiana:											
New Orleans...	2	5	0	0	0	24	4	19	13	2	135
Shreveport....	0	0	0	0	0	1	2	0	2	3	39
Oklahoma:											
Muskogee.....	0	0	0	0	0	0	0	1	0	0	
Oklahoma City..	1	3	0	0	0	0	3	1	0	0	25
Tulsa.....	0	1	0	0			2	2		0	
Texas:											
Dallas.....	3	2	1	0	0	2	3	4	2	11	50
Fort Worth....	1	4	0	0	0	0	1	0	0	0	24
Galveston....	0	0	0	0	0	0	0	0	0	0	7
Houston.....	1	0	0	0	0	3	1	2	0	3	73
San Antonio...	0	1	0	0	0	6	1	2	2	0	48
MOUNTAIN											
Montana:											
Billings.....	0	0	0	0	0	0	0	0	0	0	3
Great Falls...	0	0	0	0	0	1	0	0	0	0	8
Helena.....	0	0	0	0	0	0	0	0	0	0	5
Missoula.....	0	0	0	0	0	0	0	0	0	0	10
Idaho:											
Boise.....	0	2	0	0	0	1	0	0	0	0	9
Colorado:											
Denver.....	3	3	0	0	0	6	1	0	1	13	63
Pueblo.....	0	0	0	0	0	0	1	0	0	0	
New Mexico:											
Albuquerque...	0	0	0	0	0	3	0	0	0	2	10
Utah:											
Salt Lake City..	1	0	0	0	0	1	2	1	1	2	32
Nevada:											
Reno.....	0	0	0	0	0	0	0	0	0	0	7
PACIFIC											
Washington:											
Seattle.....	2	5	0	1			1	1		11	
Spokane.....	1	0	0	0			1	0		0	
Tacoma.....	1	3	1	1	0	0	0	1	1	3	9
Oregon:											
Portland.....	2	3	3	5	0	2	1	2	0	0	47
Salem.....	0	1	0	0	0	0	0	0	0	0	
California:											
Los Angeles...	8	5	1	0	0	20	3	0	0	9	240
Sacramento...	1	0	0	0	0	2	0	1	1	1	21
San Francisco...	5	3	1	0	0	12	2	1	0	22	153

¹ Out of town.

City reports for week ended August 22, 1931—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland.....	0	0	0	0	0	0	1	3	0
Massachusetts:									
Boston.....	1	1	1	0	0	0	2	36	4
Fall River.....	0	0	0	0	0	0	1	2	0
Springfield.....	0	0	0	0	0	0	0	5	1
Rhode Island:									
Pawtucket.....	0	0	0	0	0	0	0	1	0
Providence.....	0	0	0	0	0	0	0	19	2
Connecticut:									
Bridgeport.....	0	0	0	0	0	0	0	7	0
Hartford.....	0	0	0	0	0	0	0	30	2
New Haven.....	0	0	0	0	0	0	0	10	0
MIDDLE ATLANTIC									
New York:									
Buffalo.....	1	1	0	0	0	0	1	4	0
New York.....	5	2	1	0	0	0	9	422	46
Rochester.....	0	0	0	0	0	0	0	2	0
Syracuse.....	0	0	0	0	0	0	3	1	0
New Jersey:									
Newark.....	1	0	0	0	0	0	1	7	0
Pennsylvania:									
Philadelphia.....	5	2	0	0	0	0	1	0	0
Pittsburgh.....	1	0	1	0	0	0	1	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	0	1	0	0	0	0	1	0	0
Cleveland.....	1	1	11	0	0	0	1	7	1
Indiana:									
Indianapolis.....	2	2	0	0	0	0	0	0	0
South Bend.....	0	0	0	0	0	0	0	3	0
Illinois:									
Chicago.....	5	1	0	0	1	2	2	10	2
Springfield.....	0	0	0	0	0	0	0	1	0
Michigan:									
Detroit.....	1	0	1	0	0	0	1	12	0
Flint.....	0	1	0	0	0	0	0	1	0
Grand Rapids.....	0	0	0	0	0	0	0	2	0
Wisconsin:									
Madison.....	0	0	0	0	0	0	0	3	0
Milwaukee.....	0	0	0	0	0	0	0	1	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth.....	0	0	0	0	0	0	0	11	2
Minneapolis.....	0	0	0	0	0	0	0	2	0
Missouri:									
St. Louis.....	2	2	0	0	0	0	0	2	0
SOUTH ATLANTIC									
Maryland:									
Baltimore.....	0	0	0	0	0	0	0	2	0
District of Columbia:									
Washington.....	0	0	0	0	1	3	0	0	0
Virginia:									
Richmond.....	0	0	0	0	0	0	1	1	0
West Virginia:									
Charleston.....	0	0	0	0	0	0	0	1	0
Wheeling.....	0	0	0	0	0	0	0	2	0
South Carolina:									
Charleston.....	0	0	0	0	4	0	0	0	0
Georgia: ¹									
Atlanta.....	1	1	0	0	0	0	0	0	0

¹ Typhus fever: 1 case at Savannah, Ga.

City reports for week ended August 22, 1931—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST SOUTH CENTRAL									
Tennessee:									
Memphis.....	0	1	0	1	0	1	1	0	0
Nashville.....	0	1	0	0	0	0	0	0	0
Alabama:									
Mobile.....	0	0	0	0	0	1	0	0	0
Montgomery.....	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
For Smith.....	1	0	0	0	0	0	0	0	0
Little Rock.....	0	1	0	0	0	1	0	0	0
Louisiana:									
New Orleans.....	1	0	0	0	0	0	0	0	0
Shreveport.....	0	0	0	0	0	1	0	0	0
MOUNTAIN									
New Mexico:									
Albuquerque.....	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle.....	2	0	0	0	0	0	1	2	0
California:									
Sacramento.....	1	1	0	0	0	0	0	0	0
San Francisco.....	0	0	0	0	2	0	0	0	0

The following tables give the rates per 100,000 population for 98 cities for the 5-week period ended August 22, 1931, compared with those for a like period ended August 23, 1930. The population figures used in computing the rates are estimated midyear populations for 1930 and 1931, respectively, derived from the 1930 census. The 98 cities reporting cases have an estimated aggregate population of more than 33,000,000. The 91 cities reporting deaths have more than 31,500,000 estimated population.

*Summary of weekly reports from cities, July 19 to Aug. 22, 1931.—Annual rates per 100,000 population compared with rates for the corresponding period of 1930*¹

DIPHTHERIA CASE RATES

	Week ended—									
	July 25, 1931	July 26, 1930	Aug. 1, 1931	Aug. 2, 1930	Aug. 8, 1931	Aug. 9, 1930	Aug. 15, 1931	Aug. 16, 1930	Aug. 22, 1931	Aug. 23, 1930
98 cities.....	33	37	35	38	31	37	² 33	31	¹ 30	33
New England.....	50	24	53	36	65	34	41	44	67	44
Middle Atlantic.....	34	33	31	34	26	32	26	22	19	27
East North Central.....	39	49	38	48	31	48	⁴ 30	36	¹ 28	40
West North Central.....	33	35	17	35	29	29	36	27	⁶ 32	25
South Atlantic.....	28	38	32	40	26	18	⁷ 44	38	24	40
East South Central.....	12	24	12	6	41	18	⁸ 19	30	35	12
West South Central.....	24	31	61	35	64	49	⁹ 48	49	68	63
Mountain.....	35	70	35	35	26	18	78	18	44	44
Pacific.....	16	28	47	45	18	67	¹⁰ 39	30	35	22

See footnotes at end of table.

Summary of weekly reports from cities, July 19 to Aug. 22, 1931.—Annual rates per 100,000 population compared with rates for the corresponding period of 1930.¹—Continued.

MEASLES CASE RATES

	Week ended—									
	July 25, 1931	July 26, 1930	Aug. 1, 1931	Aug. 2, 1930	Aug. 8, 1931	Aug. 9, 1930	Aug. 15, 1931	Aug. 16, 1930	Aug. 22, 1931	Aug. 23, 1930
98 cities.....	133	105	93	67	60	49	² 39	32	² 29	28
New England.....	209	191	132	106	135	99	79	65	63	65
Middle Atlantic.....	111	144	84	87	57	61	32	39	25	31
East North Central.....	214	59	153	33	87	27	⁴ 62	19	² 27	21
West North Central.....	34	64	27	43	15	52	11	31	⁶ 15	19
South Atlantic.....	83	50	47	60	34	24	⁷ 10	24	² 10	20
East South Central.....	105	54	47	36	12	18	⁸ 25	18	23	6
West South Central.....	14	7	10	10	3	10	⁹ 0	7	7	0
Mountain.....	174	176	209	159	70	115	61	44	70	26
Pacific.....	125	164	57	105	43	63	¹⁰ 52	43	22	40

SCARLET FEVER CASE RATES

	53	49	47	38	46	31	² 34	30	² 44	32
98 cities.....										
New England.....	111	75	82	60	43	46	53	56	99	51
Middle Atlantic.....	56	34	52	21	51	20	31	17	38	25
East North Central.....	69	76	52	50	60	45	⁴ 49	39	² 57	35
West North Central.....	29	31	31	48	19	27	23	29	⁶ 21	35
South Atlantic.....	38	40	41	44	38	20	⁷ 22	28	36	30
East South Central.....	6	48	35	6	41	12	⁸ 44	48	17	30
West South Central.....	44	45	20	52	41	35	⁹ 17	31	27	35
Mountain.....	0	26	61	62	61	70	26	44	44	88
Pacific.....	12	38	16	34	22	38	¹⁰ 13	32	31	28

SMALLPOX CASE RATES

	3	7	2	4	3	3	² 1	3	² 1	2
98 cities.....										
New England.....	0	0	0	0	0	0	0	0	0	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	0
East North Central.....	2	8	1	2	2	6	⁴ 8	3	² 0	0
West North Central.....	10	21	11	12	13	6	6	6	⁶ 6	8
South Atlantic.....	0	2	2	4	2	2	⁷ 2	0	4	2
East South Central.....	6	18	6	0	0	0	⁸ 0	6	0	0
West South Central.....	0	3	3	14	0	7	⁹ 0	3	0	0
Mountain.....	0	18	0	0	9	0	9	0	0	7
Pacific.....	20	22	8	22	14	4	¹⁰ 3	12	4	10

TYPHOID FEVER CASE RATES

	16	18	27	18	22	17	² 22	20	² 21	19
98 cities.....										
New England.....	10	7	12	7	14	5	26	5	5	17
Middle Atlantic.....	8	7	13	5	16	10	14	14	14	13
East North Central.....	5	13	11	12	10	11	⁴ 7	10	² 11	9
West North Central.....	19	48	31	23	19	19	13	29	⁶ 21	21
South Atlantic.....	69	42	77	52	53	66	⁷ 78	44	55	60
East South Central.....	47	66	64	108	29	60	⁸ 75	132	70	78
West South Central.....	10	38	169	42	95	14	⁹ 45	42	91	24
Mountain.....	0	18	17	26	44	35	44	26	9	26
Pacific.....	27	10	4	16	14	10	¹⁰ 10	12	8	6

See footnotes at end of table.

Summary of weekly reports from cities, July 19 to Aug. 22, 1931.—Annual rates per 100,000 population compared with rates for the corresponding period of 1930.¹—Continued.

INFLUENZA DEATH RATES

	Week ended—									
	July 25, 1931	July 26, 1930	Aug. 1, 1931	Aug. 2, 1930	Aug. 8, 1931	Aug. 9, 1930	Aug. 15, 1931	Aug. 16, 1930	Aug. 22, 1931	Aug. 23, 1930
91 cities.....	1	2	3	1	2	3	11 3	1	12	3
New England.....	0	0	2	0	2	0	0	0	2	0
Middle Atlantic.....	1	1	4	0	3	2	3	2	2	3
East North Central.....	2	3	2	1	1	1	12	0	12	1
West North Central.....	0	3	0	0	0	3	3	3	13	0
South Atlantic.....	2	4	6	6	0	10	14	0	6	8
East South Central.....	0	0	13	0	13	0	17	0	0	0
West South Central.....	3	11	0	0	3	0	7	0	0	4
Mountain.....	0	0	0	0	0	18	17	0	0	9
Pacific.....	2	2	7	2	5	5	10 3	0	7	7

PNEUMONIA DEATH RATES

91 cities.....	44	56	48	52	48	52	11 46	53	148	45
New England.....	31	44	41	41	34	46	29	41	36	56
Middle Atlantic.....	55	68	59	59	52	56	56	68	56	53
East North Central.....	32	38	30	43	35	47	137	27	132	27
West North Central.....	53	57	47	48	56	45	44	27	138	36
South Atlantic.....	43	86	65	66	79	72	756	74	63	52
East South Central.....	44	91	50	52	63	45	155	52	57	65
West South Central.....	52	71	59	75	62	53	52	85	59	57
Mountain.....	17	79	44	62	44	70	44	123	44	53
Pacific.....	43	7	36	35	38	35	10 17	40	53	40

¹ The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1931, and 1930, respectively.

² South Bend and Terre Haute, Ind., Raleigh, N. C., Covington, Ky., Fort Smith, Ark., and San Francisco, Calif., not included.

³ Terre Haute, Ind., and St. Paul, Minn., not included.

⁴ South Bend and Terre Haute, Ind., not included.

⁵ Terre Haute, Ind., not included.

⁶ St. Paul, Minn., not included.

⁷ Raleigh, N. C., not included.

⁸ Covington, Ky., not included.

⁹ Fort Smith, Ark., not included.

¹⁰ San Francisco, Calif., not included.

¹¹ South Bend and Terre Haute, Ind., Raleigh, N. C., Covington, Ky., and San Francisco, Calif., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended August 15, 1931.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended August 15, 1931, as follows:

	Dysentery	Lethargic encephalitis	Poliomyelitis	Small-pox	Typhoid fever
Prince Edward Island ¹					
Nova Scotia.....					1
New Brunswick.....					1
Quebec ¹					
Ontario.....		2	9	2	35
Manitoba.....					3
Saskatchewan.....	3		1	6	1
Alberta ¹					
British Columbia.....			5	3	2
Total.....	3	2	15	11	43

¹ No case of any disease included in the table was reported during the week.

Quebec Province—Communicable diseases—Week ended August 15, 1931.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended August 15, 1931, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	12	Poliomyelitis.....	17
Diphtheria.....	10	Scarlet fever.....	22
Erysipelas.....	3	Tuberculosis.....	49
Measles.....	7	Typhoid fever.....	28
Ophthalmia neonatorum.....	1	Whooping cough.....	34

CUBA

Habana—Communicable diseases—Four weeks ended July 18, 1931.—During the four weeks ended July 18, 1931, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chicken pox.....	3		Scarlet fever.....	2	
Diphtheria.....	7	5	Tuberculosis.....	22	3
Malaria ¹	7		Typhoid fever ¹	29	9
Measles.....	57	4			

¹ Many of these cases are from the island of Cuba, outside of Habana.

JAMAICA

Communicable diseases—Four weeks ended July 18, 1931.—During the four weeks ended July 18, 1931, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island of Jamaica outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Chicken pox.....		7	Puerperal fever.....		3
Diphtheria.....	1	1	Scarlet fever.....	3	16
Dysentery.....	1	5	Tuberculosis.....	36	74
Erysipelas.....		3	Typhoid fever.....	11	82
Leprosy.....	1	1			

MEXICO

Tampico—Communicable diseases—July, 1931.—During the month of July, 1931, certain communicable diseases were reported in Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria.....	2		Measles.....	11	3
Dysentery.....	12	4	Paratyphoid fever.....	1	1
Enteritis (various).....	69		Tuberculosis.....	39	33
Influenza.....	9	3	Typhoid fever.....	8	6
Malaria.....	171	22	Whooping cough.....	39	

PORTO RICO

San Juan—Communicable diseases—Four weeks ended July 18, 1931.—During the four weeks ended July 18, 1931, cases of certain communicable diseases were reported in San Juan, Porto Rico, as follows:

Disease	Cases	Disease	Cases
Diphtheria.....	6	Tetanus.....	4
Malaria.....	49	Whooping cough.....	10
Ophthalmia neonatorum.....	1		

TRINIDAD

Port of Spain—Vital statistics—June, 1930, 1931.—The following statistics for the month of June, 1930 and 1931, are taken from a report issued by the public health department of Port of Spain, Trinidad:

	June, 1930	June, 1931		June, 1930	June, 1931
Number of births.....	150	160	Deaths under 1 year.....	18	20
Birth rate per 1,000 population.....	27.1	28.3	Deaths under 1 year per 1,000 births.....	120	125
Number of deaths.....	110	93			
Death rate per 1,000 population.....	19.9	16.5			

YUGOSLAVIA

Communicable diseases—June, 1931.—During the month of June, 1931, certain communicable diseases were reported in Yugoslavia, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	52	6	Paratyphoid fever.....	5	—
Cerebrospinal meningitis.....	19	9	Puerperal fever.....	3	3
Diphtheria and croup.....	439	55	Rabies.....	1	1
Dysentery.....	93	13	Scarlet fever.....	442	34
Erysipelas.....	153	6	Tetanus.....	45	26
Lethargic encephalitis.....	3	3	Typhoid fever.....	148	19
Measles.....	1,004	9	Typhus fever.....	3	—

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place	Janu- ary, 1931	Febru- ary, 1931	March, 1931	April, 1931	May, 1931			June, 1931			July, 1931		Aug. 1-10, 1931
					1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31
Indo-China (French) (see also table above):													
Cambodia:	C	125	79	58									
Cochin-China:	C	24	103	62	1	44	40	83	96		72	82	87
						52	73	71	69		66	30	47
													39

PLAGUE

Place	Week ended—												
	Feb. 8- Mar. 7, 1931			Mar. 8- Apr. 4, 1931			Apr. 5- May 2, 1931			May, 1931			August, 1931
	9	16	23	30	6	13	20	27	4	11	18	25	
Algeria:													
Algiers:	1	1										2	
Bone:					1								
Constantine, vicinity of:													
Philippeville:	1												
Argentina:													
Cordoba Province:	2												
Entre Rios Province—Diamante:	2												
Entre Rios Province—Palpala:	1												
San Juan Province:													
Santa Fe:	2												
Belgian Congo:													
						1							
						1							
British East Africa (see also table below):													
Tanganyika:	22	8	17	5	7	4	7	5	1				
	4	1	2	2	8	2	4	1	3				
Uganda:	15	19	33	31	63	91	106	101	95	132			
	15	19	32	28	23	87	100	99	94	129			

Place	Feb., 1931	Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931
British East Africa (see also table above):						
Kenya.....	21	7	345	245	154	441
Indo-China (see also table above):						
.....	2	4	11	2	2	1
Madagascar (see also table above):						
Ambositra Province.....	92	70	30	19	15	
Antsirabe Province.....	88	66	29	18	13	
.....	84	83	48	7	8	
Marinarivo Province.....	79	74	47	7	8	
.....	31	19	6	2		
Moramanga Province.....	29	19	6	2		
.....	7	1		2		
Tananarive Province.....	145	90	41	18	2	
.....	139	81	40	13	1	

SMALLPOX

Place	Week ended—													
	May, 1931				June, 1931				July, 1931					
	9	16	23	30	6	13	20	27	4	11	18	25	1	8
Algeria:														
Algiers.....														
Constantine.....														
Arabia: Aden.....														
Belgian Congo.....														
Belgium.....														
Bolivia.....														
Brazil: Porto Alegre (alastrim).....														
British East Africa: Tanganyika.....														
British South Africa:														
Northern Rhodesia.....														
Southern Rhodesia.....														

1 Reports incomplete.

2 An epidemic of smallpox was reported on May 13 with 716 cases and 314 deaths since the middle of April, 1931, in Mendes Province, Bolivia.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place	Feb. 8- Mar. 7, 1931	Mar. 8- Apr. 4, 1931	Apr. 5- May 2, 1931	Week ended—												August, 1931		
				May, 1931					June, 1931									
				9	16	23	30	6	13	20	27	4	11	18	25	1	8	15
Canada:																		
Alberta.....	1																	
British Columbia.....	8																	
Manitoba.....	1																	
Winnipeg.....	1																	
Nova Scotia.....	1																	
Ontario.....	29	9	17	5	3	4	3	14	3	6	12	1	2	2	2	3		
Kingston.....	1																	
North Bay.....	1																	
Ottawa.....	1																	
Sault Ste. Marie.....	2																	
Toronto.....	2	4	1	1				1										
Quebec.....																		
Saskatchewan.....	63	53	46	7	15	18	8	7	16	18	13	1	13	10	19	6		
Regina.....	1	2	2															
Canary Islands: Las Palmas.....	1																	
Chile:																		
Antofagasta.....																		
Chacaral.....							1					1						
China:																		
Amoy.....		1	2	1	1	1	2	1	2			1	1	1	1			
Canton.....		1	1	1	1	1	2	1	1	1	1	1	1	1	1			
Foochow.....	3	P	P				P											
Hankow.....	8	3	1	1	1	1	2	1	1	1	1	1	1	P	P			
Hong Kong.....	3	2	1				1											
Manchuria—																		
Harbin (see also table below).....	4	2	1	1	1	1	1	1										
Kwantung—Dairen.....		2	1															
Nanking.....	P	P	P	P	P	P												
Shanghai—																		
Foreigners only.....	16	6	17	1	4	1	1	2	6	2	1	2	1	2	1			
Including natives.....	14	10	18	1	3	3	3	1	5	4	3	2	1	2	1			
Swatow.....	13	26	2															
Tientsin.....																		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C Indicates cases; D, deaths; P, present]

Place	Feb. 8- Mar. 7, 1931	Mar. 8- Apr. 4, 1931	Apr. 5- May 2, 1931	Week ended —																			
				May, 1931					June, 1931					July, 1931					August, 1931				
				9	16	23	30	6	13	20	27	4	11	18	25	1	8	15					
Indo-China (see also table below); Pnompenh.....	C	1																					
Saigon and Cholon.....	D	8	1		1																		
Iraaq:	C	8	1		1																		
Baghdad.....	D		2		1	2		1															
Basra.....	D					2																	
Mosul Liwa.....	C					2		1															
Nasul Liwa.....	D	1									1												
Ivory Coast (see table below).																							
Japan:																							
Kobe.....	C	2																					
Nagoya.....	C																						
Mexico (see also table below):																							
Jalisco (State)—Gundalajara.....	D	1	1		1																		
Mexico City and surrounding territory.....	D	33	43		10	10	21	5	4	16		12	5	4	1	8	2						
Monterrey.....	D	22	14		3	2	2	4	3	6		4	3	1		1	1						
Torreon.....	C		1		1			1				2											
Vera Cruz.....	D		2					1				1											
Morocco (see table below).	C	3	2		1																		
Nigeria: Lagos.....	C		2																				
Poland.....	C	1																					
Portugal: Lisbon.....	C	40	52	56	19	14	16	18	17	12	14	15	17	12	18	17	12	8					
Rumania (see table below).	C																						
Siara.....	C	2		1		3	3		1	4		1	1	1									
Spain.....	D	P	P																				
Straits Settlements.....	C	P	4	10																			
Sudan (Anglo-Egyptian).....	D	2	1	3																			
	D	97	8	3																			
	D	10	2	2																			

Sudan (French) (see table below).
 Syria (see table below).
 Tunisia: Tunis.....

Sudan (French) (see table below).

Syria (see table below).

Tunisia: Tunis.

Turkey (see table below).

Union of Socialist Soviet Republics (see table below).

Union of South Africa:

Cape Province.

Orange Free State.

Transvaal.

Upper Volta.

D

On vessel:

S. S. Clan Macgregor at Suez.

S. S. Clan Buchanan at Suez.

S. S. Rotterdam at Naples.

S. S. Clan McFavish at Manila from

Canton.

S. S. Clan Macgregor at Cebu.

S. S. Clan Macgregor at Cebu.

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S. S. Clan Macgregor at Cebu.

China: Harbin (see also table above).

Chosen.

France.

Greece.

Mexico (see also table above).

Morocco.

Rumania.

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Place	Jan., 1931	Feb., 1931	Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931
China: Harbin (see also table above).	1	11	13	10	4	1	1
Chosen.	1	11	13	10	4	1	1
France.	4	16	15	54	6	194	532
Greece.	4	16	15	54	6	194	532
Mexico (see also table above).	3	4	1	1	2	44	23
Morocco.	4	4	6	7	49	896	1,577
Rumania.	4	1	1	1	1	43	77
Turkey.	63	37	37	6	1	9	1
Union of Socialist Soviet Republics:							
Territories in Asia.	C	C	C	C	C	C	C
Ukraine.	C	C	C	C	C	C	C
Other territories in Europe.	C	C	C	C	C	C	C
Railroads, etc.	C	C	C	C	C	C	C
Place	Jan., 1931	Feb., 1931	Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931
Indo-China (see also table above).	C	C	C	C	C	C	C
Ivory Coast.	C	C	C	C	C	C	C
Sudan (French).	C	C	C	C	C	C	C
Syria: Beirut.	C	C	C	C	C	C	C

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place	Week ended—															
	May, 1931				June, 1931				July, 1931				August, 1931			
	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22
Algeria:																
Algiers.....	3	3	1	3	4	4	4	1								
Constantine Department.....	3	8	5	6	6	3	1	16	2		1		3			
Oran.....	1	1		2	2						1		1			
Australia, Western.....	1															
Bulgaria.....	30	3	8	3	11	10	6	3								
Chile: Valparaiso.....	3	1		3	2	1	1	2								
China:																
Canton.....	1															
Manchuria—Harbin.....	3							16			1					
Shanghai.....	2															
Tientsin.....																
Chosen (see table below).																
Czechoslovakia (see table below).																
Egypt:																
Alexandria.....	1				1	1	1	1								
Behelra Province.....	4															
Eritrea: Asmara.....	2															
Great Britain: Scotland—																
Fife County.....	1			1												
Greece (see table below).																
Guatemala: (see table below).																
Iraq: Baghdad.....	6	2														
Irish Free State:	1															
Cork County—																
Schull.....																
Skibbereen.....																
Kerry County—																
Dingle.....																
Listowel.....			1													

Padua.....
Sergipe State.....

British Cameroons: Mamfe.....
Colombia—Magdalena Province—near Ciénaga.....
Gold Coast:
Akuse.....
Dagomba District.....
Kintampo.....
Tamale.....
Wale Wale.....
Ivory Coast:
Bobo Dioulasso.....
Grand Bassam.....
Kong Circle.....
Seguela.....
Nigeria: Abakaliki.....
Senegal: Podor (Winterland).....
Sudan (French).....
Upper Volta:
Banfora.....
Quagadougou.....

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